iPECS vUCP
(Virtual Unified Communications Platform)

Installation Manual

Please read this manual carefully before the operating system.
Retain it for future reference.

iPECS is an Ericsson-LG Brand

Revision History

ISSUE	DATE	DESCRIPTION OF CHANGES
1.0	Jan., 2018	S/W version 3.0.x. - Initial Release
1.1	Mar., 2018	S/W version 3.1.x. - Change the vUCP Default login value HTTPS and port numbers from 437 to 443
1.2	Apr. 2019	S/W version 3.5.x. - vMCIM is added, and the AWS platform is supported. - System Default License is changed to vUCP-CS2400S(SWL)
1.3	Dec.03, 2019	S/W version 4.0.x. - General Update (Style, Chart, Fonts)
	Dec.18, 2019	- Added vVOIMT.
1.4	Sep. 2020	S/W version 4.1.x. - Applied S/W version 4.1.x
1.5	Mar., 2021	S/W version 5.0.x. - Applied S/W version 5.0.x
1.6	Jan., 2022	S/W version 6.0.x. - Applied S/W version 6.0.x - Added “5 Microsoft Azure” Section - Added “6.2.4 Online License” Section - General Update

Table of Contents

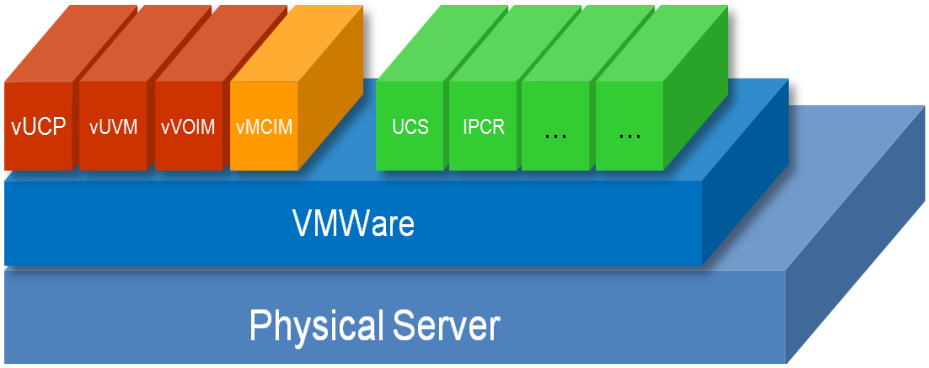
1 Introduction

1.1 Overview of virtual UCP (vUCP)

The iPECS UCP is an award-winning all-in-one IP-PBX and UC solution designed for SMB and midsize enterprises providing great flexibility, scalability, and reliability in delivering unified communications services and advanced communication features over dispersed and mobile environments.

The Virtual UCP (vUCP) is a software version of UCP, which can be run on the virtual machine (VMware®). While supporting all the compelling advantages ofiPECS UCP, the vUCP allows more simple and flexible deployment and management with a low total cost of ownership.

For targeting the midsize enterprise, vUCP supports 200 ports at an affordable price to SMB businesses and can grow to 2,400 ports with system port licenses. The vUCP can be installed on customers' existing virtual infrastructure or can be built in a new virtual server, together with other product and business applications like UCS premium, IPCR, Report Plus, etc.



1.2 Manual Application

This document provides detailed information covering the configuration of the vUCP.

The manual is written for the experienced installer who has knowledge of telephony terms and functions about the small and mid-sized business telecommunications systems.

1.3 Manual Organization

This manual is organized into four (4) major sections, including:

- **Section 1 Introduction**: This section introduces the content and organization of the manual.
- **Section 2 Supported virtualized System**: This section introduces the supported virtualized system and requirements. Also, it explains the specification of vUCP and explains the differences with embedded UCP systems.
- **Section 3 Virtual Machine Deployment**: This section introduces the deployment of the virtual machine. It explains how to deploy the vUCP, vUVM, vMCIM and vVOIM/vVOIMT.
- **Section 4 System Upgrade**: This section introduces how to upgrade the systems.

2 Supported virtualized system

2.1 Specification

The Virtual UCP system is virtualized into function base software operation as follows

- Virtual UCP(vUCP)– Voice and Standard UC features
- Virtual UVM(vUVM)– Voice mail
- Virtual VOIM(vVOIM)– G/711 base VOIP functions
- Virtual MCIM(vMCIM)– Voice Conference supported from Unified 3.5
- Virtual VOIMT(vVOIMT)– VOIP functions and transcoding functions from Unified 4.0

System Capacity of vUCP, vUVM, vMCIM, and vVOIM/vVOIMT

The capacities associated with each software are given in the below table.

Table 2.1-1Virtual UCP System Capacities

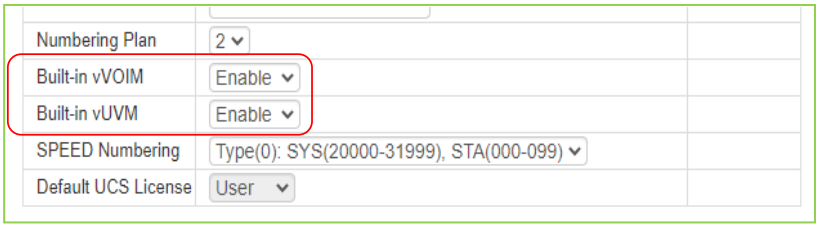
ITEM	Capacity	Remark
System Port • Default • Maximum	 50 2400	 vUCP-CS2400S(SWL) license vUCP-SPL licenses
Stations	2400	Total stations and Lines cannot exceed the available System port.
CO/IP Lines (external network channels incl. VoIP)	998	
UCS Standard Clients UCS Premium Clients	400 2400	
Server Redundancy	Yes	Geographical redundancy only
WTIM4/8 modules WTIM24	30 10	Max 3 WTIMs in single sync. zone WTIM24 can't' be in the same sync. zone w/ WTIM4/8
DECT phones	192 254	Mixed with WTIM4/8 Only WTIM24
VoIP Channels • System Maximum • Virtual VOIP • H/WVOIP	 998 998(Default: 6vVOIMchannels) 998	 Need Virtual VOIP license or H/W VOIP - Soft VOIP: G.711 only, no transcoding - DSP VOIP: G.711/729/722, transcoding
Per vVOIM (virtual VOIP) • Default channel • Maximum(Internal) • Maximum	 0 128 Channels 250 Channels	 w/License (8ch base increment)
vVOIM per System	4	
Per vVOIMT(virtual VOIP& Transcoding) • Default channel • Maximum	 32 32 Channels	 32 channel licenses
vVOIMT per System	31	Maximum 998 channels

ITEM	Capacity	Remark
Per vMCIM(virtual conference) • Default channel • Maximum	 64 64 Channels	 64 channel licenses
vMCIM per system	15	Maximum 998 channels
Per vUVM(virtual UVM) • Default (per System) • Maximum (Internal) • Maximum (per vUVM) • Maximum (per System)	 8 Channels 64 Channels 150 Channels 300 Channels	 w/License (8ch base increment)
VM Message Number • System Maximum • Per VM board	 64000 32000	
vUVM per System	2	
USB Host port	0	Not supported
Internal Page Zones	100	
System Speed Dial	12,000	
System Speed Dial Zones	50 Groups	
Station Speed Dial, per Station	100	
Total Station Speed Dial	24,000	
Call park	200	
Last Number Redial	10 (23 digits)	
Save Number Redial	1 (23 digits)	
Standard DSS Consoles/Station	9	
Serial DSS - System	500	
Serial DSS - Station (LIP-8000)	4	
Serial DSS - Station (LIP-9000)	4	
SMDR buffer	30,000	
CO Line Groups	200	
Station &Station Groups	200	
Station &Station Group Members	200	
Pickup Groups	200	
Pickup Group Member	2,4000	
Personal Groups	1200	
Conference Group - System	160	MCIM or VCIM are required
Conference Group - Station	100	MCIM or VCIM are required
Executive/Secretary pairs	100	
Authorization Codes	5200	Station:2400, System:2800
Transparent Networking Table	100	
CLI Msg Wait (Missed calls)	4,000	
Local Redundancy	No	
Geographical Redundancy	Yes	

ITEM	Capacity	Remark
Flex DID Table	10,000	
MSN table	2,400	
DID Digits Analysis	4	
Tenancy (ICM) Groups	100	
ICLID table	500	

Built-in vVOIM and vUVM

The features are supported by Unified 5.0. But you remember that they are allowed only when a new vUCP is installed by 5.0 or later image and not allowed when an upgrade from the old version is done. If you used them, vUCP, vVOIM, and vUVM could be run in a single virtual machine. But the maximum port of vUCP is changed to that of UCP600. You can configure them in PGM 100.



vUCP site, which is already installed

To use built-in vVOIM/vUVM

1) Download DB
2) Remove the current vUCP
3) Install vUCP using vUCP 5.0 image (or later)
4) Set system IP
5) License transition with new serial number
6) Upload DB
7) Delete external vUVM/vVOIM if it is not used
8) Enable built-in vUVM/vVOIM in PGM100 if it is used

To use vUCP without change

1) Just upgrade vUCP from 4.1 or below to 5.0
2) Built-in vVOIM/vUVM cannot be enabled in PGM100.

2.2 Virtual Server Support

Supported Virtual Server

VMware vSphere

The VMware vSphere ESXi 6.0 or later version supports the vUCP virtual machines.

AWS(Amazon Web Services)

The AWS is supported from Unified version 3.5.

3 VMware Virtual Machines

3.1 Supported Virtual Server Features

vCenter

vMotion

The vMotion supports virtual machine migration.

Snapshot

The snapshot can be used only when the VM is powered off. It can provide an easy fallback to stored points. But it is recommended that the unused snapshot is deleted due to the virtual machine performance.

OVF Deployment

Soft Power Off

3.2 Supported Hardware and Virtual Machine Platforms

For proper hardware platforms and hardware requirements for VMware ESXi, refer to
http://www.vmware.com/resources/compatibility/search.php

Current supported VMware software can be found in
https://www.vmware.com/products.html

If you want to find the most up-to-date technical documentation, refer to
http://www.vmware.com/support.html

3.3 Minimum Hardware and Software Requirements

The vUCP software is released in OVF format. Therefore, the following specifications must be met.

- VMware vSphere 6. x software
- VMware vSphere client software(web client recommended)
- vCenter (supported but not required)
- CPU: Intel Xeon family with 2.0GHz clock speed or better(2.4GHz recommended)
- Memory: 12G Bytes or higher is recommended. It must satisfy the ESXi requirements in addition to the specific RAM requirements of each deployed virtual machine.
- Network: 1 Ethernet interface
- HDD: 100G Bytes or higher is recommended.

3.4 Profile of Virtual Machine

The OVF of vUCP, vUVM, vMCIM, and vVOIM/vVOIMT installs the following default virtual machine.

vUCP

Lower SW version 5.0.x

- CPU: 1 vCore
- Memory: 4G Bytes
- HDD: 24G Bytes(Application) + 1G Bytes (DB data)
- Network: 1 Gigabit

Higher SW version 5.0.x: Internal vUVM, vVOIM is Included.

- CPU: 1 vCore
- Memory: 1G Bytes
- HDD: 8G Bytes(Application) + 1G Bytes (DB data) + 1G Bytes (Voice data, can be changed)
- Network: 1 Gigabit

vUVM

- CPU: 1 vCore
- Memory: 4G Bytes
- HDD: 24G Bytes(Application) + 16G Bytes(Voice data)
- Network: 1 Gigabit

vVOIM

- CPU: 1 vCore
- Memory: 4G Bytes
- HDD: 24G Bytes(Application)
- Network: 1 Gigabit

vMCIM/vVOIMT

- CPU: 1 vCore
- Memory: 1G Bytes
- HDD: 8G Bytes (Application)
- Network: 1 Gigabit

3.5 Restrictions

Multiple virtual servers and disk storage requirements (IOPS/30 per server)

For acceptable performance, the number of virtual machines which run on an ESXi host should not exceed the IOPS (Input/Output Operation per Second) of the disk storage divided by 30.

Refer to the below URL for more information

https://kb.vmware.com/selfservice/microsites/search.do?cmd=displayKC&docType=kc&externalId=1031773&sliceId=2&docTypeID=DT_KB_1_1&dialogID=425694459&stateId=0%200%20486902509

3.6 Disk Type Selection of Virtual Machines

You can select the virtual hard disk type during the virtual machine deployment, and you can choose it according to your purpose.

Refer to the 'vSphere Storage Guide' of 'ESXi and vCenter Server Product Documentation'at the below URL

https://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-6-pubs.html

3.6.1 Thick Provision Eager Zeroed

Space required for the virtual disk is allocated at creation time. The data remaining on the physical device is zeroed out during creation. It might take much longer to create disks in this format than to create other types of disks.

3.6.2 Thick Provision Lazy Zeroed

Space required for the virtual disk is allocated during the creation of the disk file. Any data remaining on the physical device is not erased during creation but is zeroed out on-demand at a later time on the first write from the virtual machine. The virtual machine does not read stale data from the disk.

3.6.3 Thin Provision

Space required for the virtual disk is allocated during creation. This formatting type does not zero out any old data that might be present in this allocated space. A non-root user cannot create disks of this format.

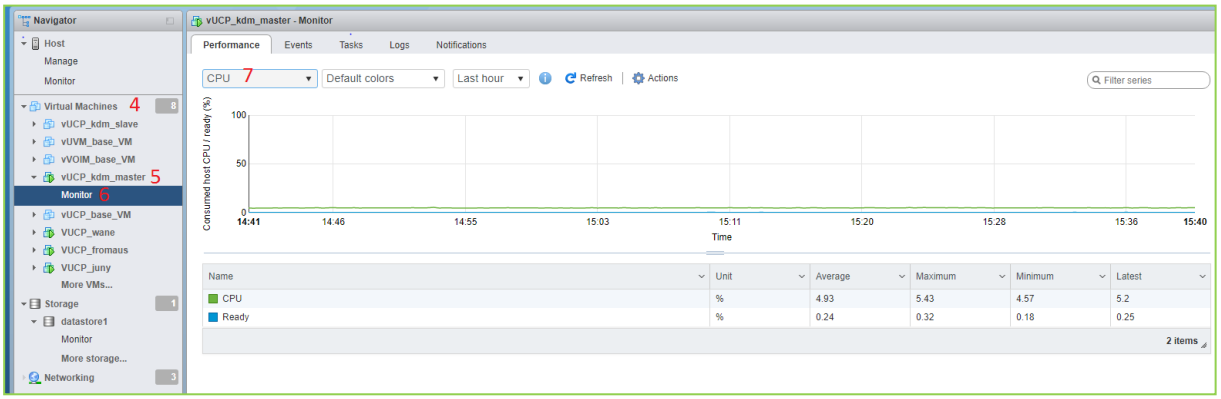
3.6.4 Determining disk type

If you are concerned about disk space, use the thin disks. If you are concerned about security and you want slightly better performance on initial disk writes, use eager zeroed thick disks. If you want easier administration, use the default disk type (lazy zeroed thick disks). Note that once an initial write to a new disk block has been completed, disk performance is equal across all disk types.

3.7 Performance View of Virtual Machines

You can see the performance page in vSphere by the following process. If vCenter is used, you can see them on a long-term basis.

1) Connect to the IP address of ESXi by the web browser
2) Click 'Open the VMware Host Client.'
3) Log in by input 'Username' and 'Password.'
4) Click 'Virtual Machines in Navigator'
5) Click 'My VM.'
6) Click 'Monitor of My VM'
7) You can see the performance of CPU, Memory, Disk, and Network



Refer to 'vSphere Monitoring and Performance Guide' of 'ESXi and vCenter Server Product Documentation in the below URL

https://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-6-pubs.html

3.8 Virtual Machine Deployment

The virtual Machine Deployment Process is as below.

1) Confirm the System Settings
2) Download the software
3) Deploy the OVF file
4) Power on Virtual Machine
5) Connect to Virtual Machine
6) Configure Network Settings and Restart
7) Access to Web and Complete Install Wizard
8) Create Serial Number
9) Order and Generate (download) licenses from the license portal
10) Upload the license file

In the case of vUVM, vMCIM and vVOIM/vVOIMT, there are some differences from vUCP.

1) No serial number is supported.
2) No install wizard is supported.
3) No license file is supported.

Therefore, the procedure from 8 to last is not required.

3.8.1 Confirm the System Settings

You must finalize the following values before deploying the virtual machine and obtaining any licenses. If you change some factors after obtaining any licenses, those licenses are invalidated.

- System IP Address
- Router IP Address
- Firewall IP Address

Downloading the software

You can download OVF and ROM files from the GPS website Library menu.

https://partner.ericssonlg-enterprise.com

OVF File

The OVF file is used for virtual machine deployment.

ROM File

The Rom file is used for the application upgrade at the web admin upgrade menu.

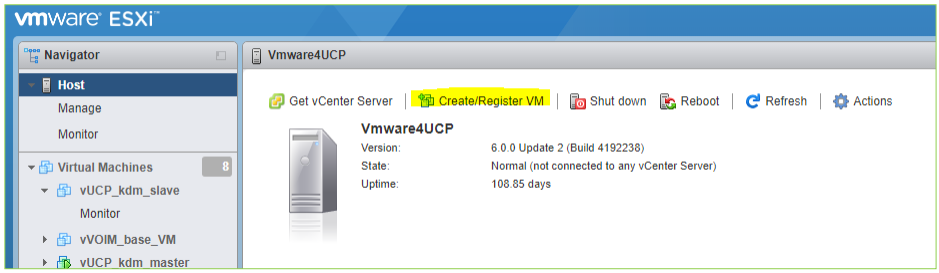
3.8.2 Deploying the OVF File

You can create a new virtual machine by the following process. This process can take several hours, depending on your network speed.

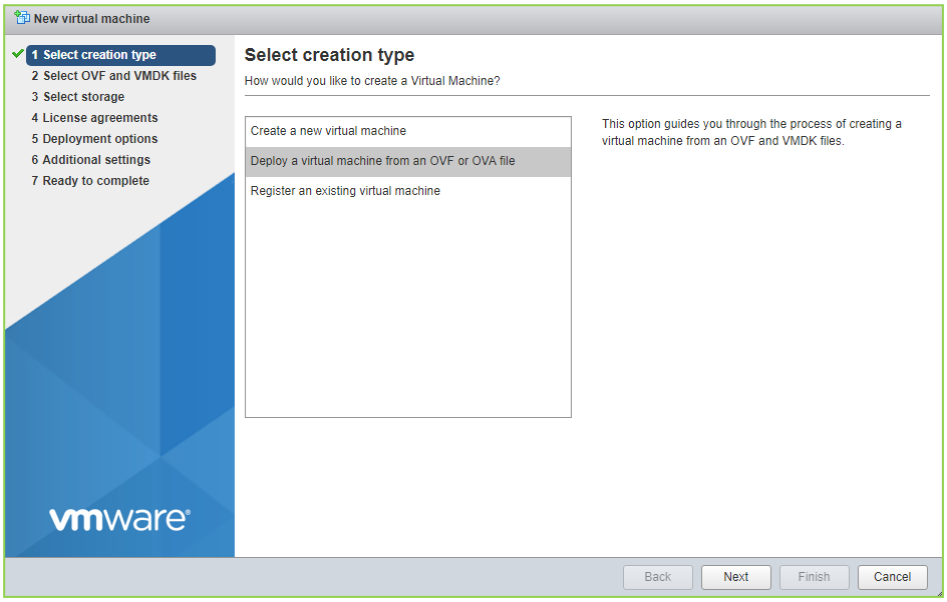
Deployment of the OVF file using vSphere

1) Log in VMware ESXi.

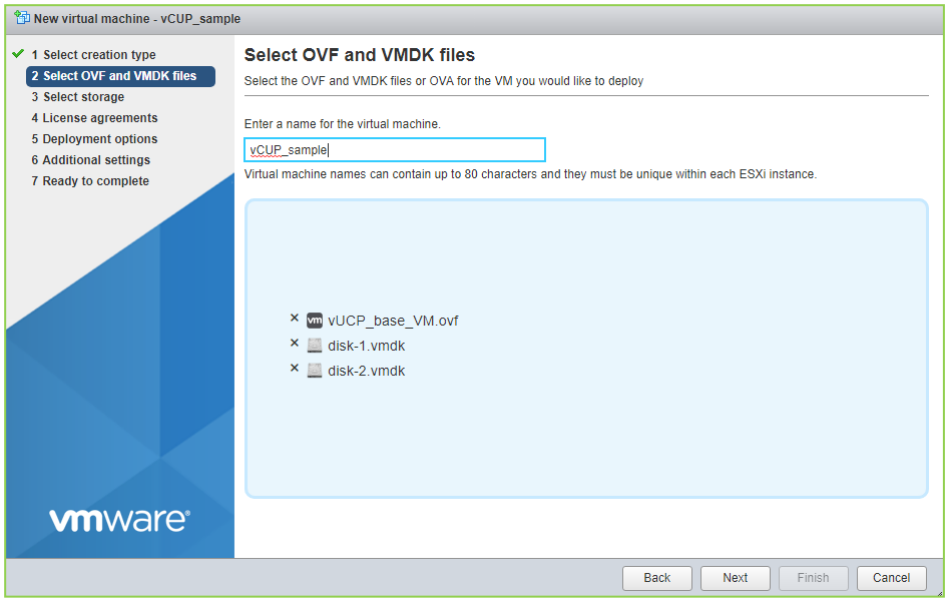
2) Click 'Create/Register VM.'



3) Click 'Deploy a virtual machine from an OVF or OVA file' and then click 'Next.'



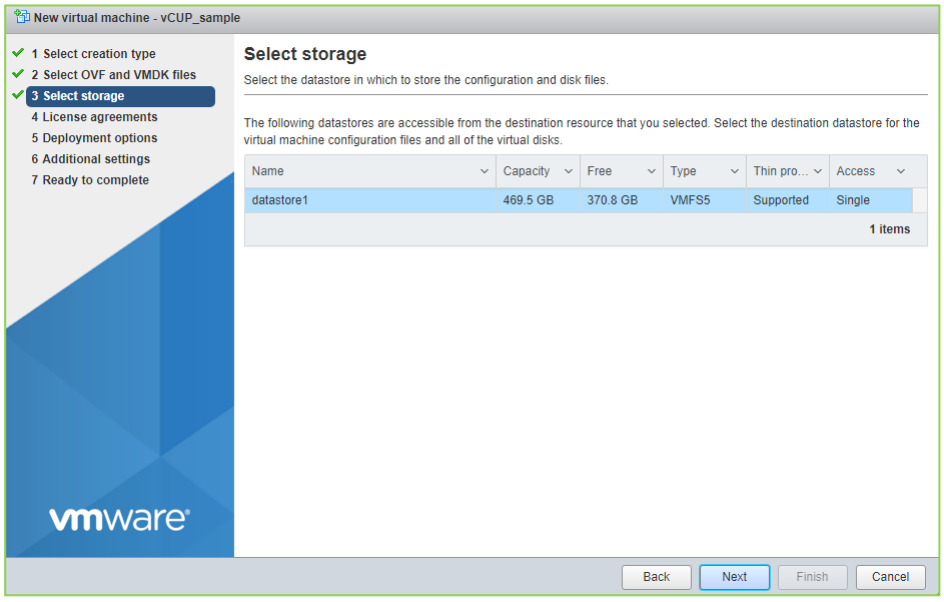
4) Input the name for the virtual machine, click to select files or drag/drop, and then click 'Next.'



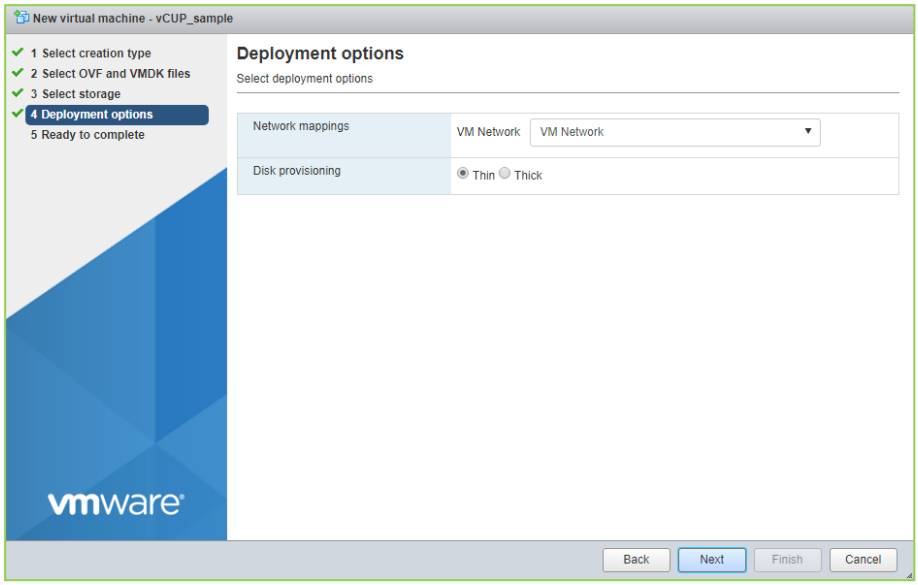
The number of 'vmdk' files is different;

- vUCP (Lower SW version 5.0): 2 vmdk files, 32GB (application) + 1GB (DB data)
- vUCP (Higher SW version 5.0): 3 vmdk files, 8GB (application) + 1GB (DB data) + 1GB (Voice data)
- vUVM: 2 vmdk files, 32GB (application) + 16GB (VM messages)
- vVOIM: 1 vmdk file, 32GB (application)
- vMCIM: 1 vmdk file, 8GB (application)
- vVOIMT: 1 vmdk file, 8GB (application)

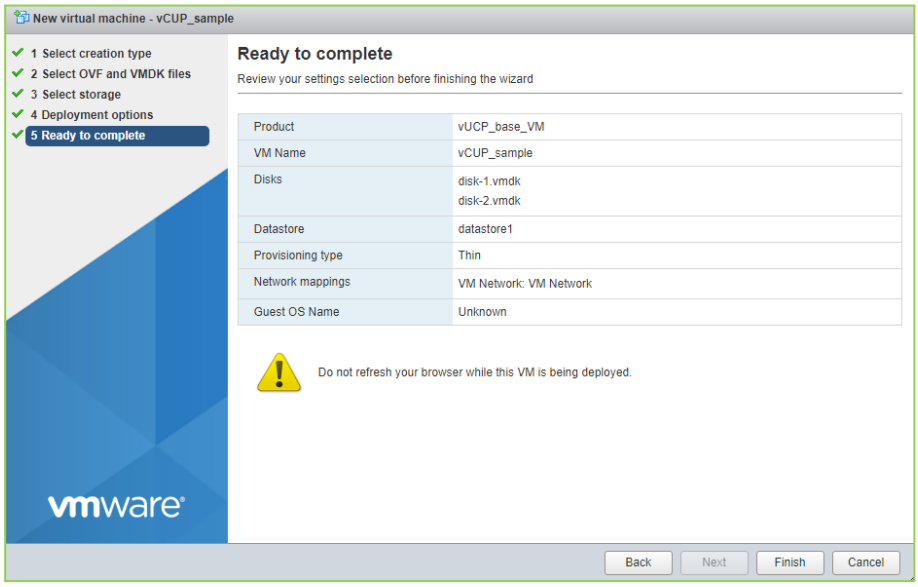
5) Select storage and then click 'Next.'



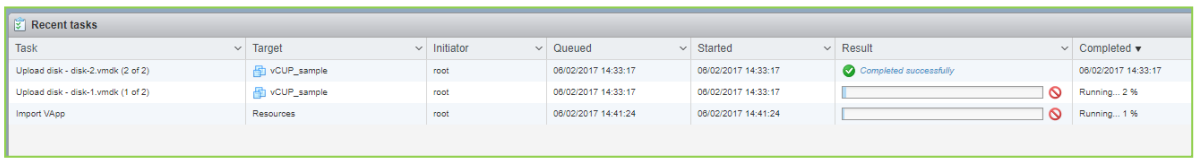
6) Select Network mappings and Disk provisioning and then click 'Next.'



7) Review the settings and then click 'Finish.'



8) Wait until VM is created successfully



9) Once deployment has been completed, the new virtual machine appears in Virtual Machines.

10) Change the disk size of 'Hard disk 3' for voice data(Optional, Higher SW version 5.0)

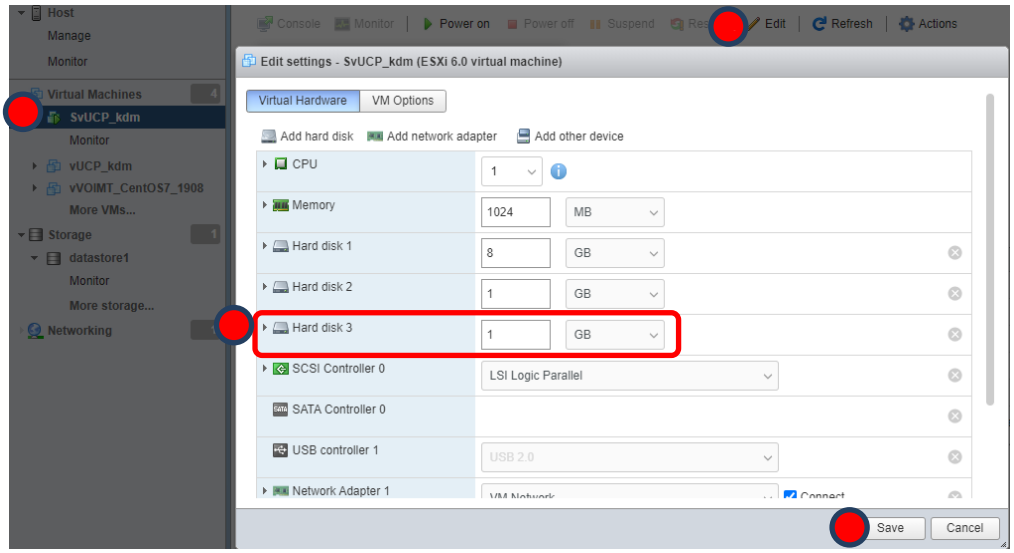
① Power off the VM

② Select VM

③ Click 'Edit

④ Modify

⑤ Click 'Save'

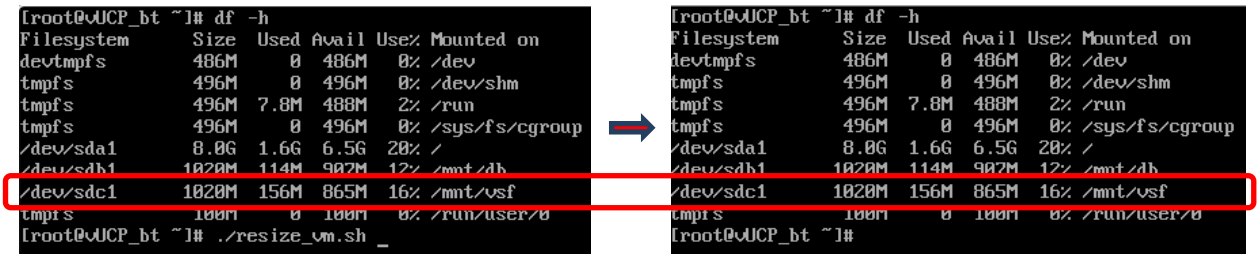


⑥ Power on the VM

⑦ Login as root

⑧ Input ‘./resize_vm.sh’

⑨ After reboot, check the status by 'df –h' command



You can find the required size in the following table.

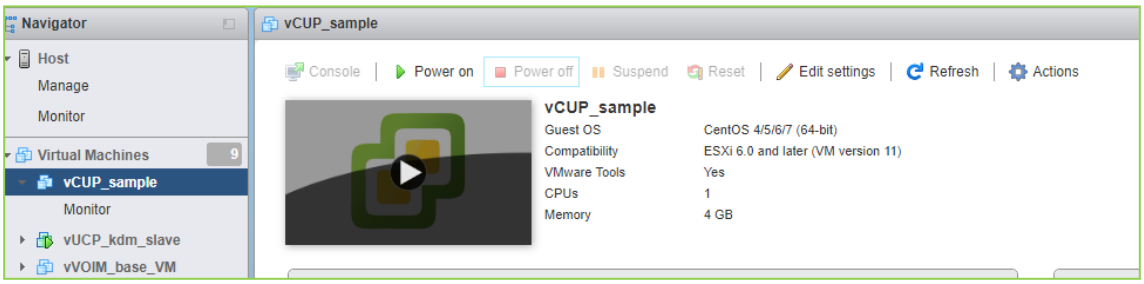
	100 hours	200 hours	300 hours	400 hours	500 hours
Disk Size	3 GBytes	6 GBytes	9 GBytes	12 GBytes	15 GBytes

Note

You don't need to change the profile of vUCP, vUVM, vVOIM/vVOIMT, vMCIM.

3.8.3 Power on VM

After clicking the created virtual machine, you can 'Power on the system.



3.8.4 Connecting to Virtual Machine

After Power on, you can connect to the virtual machine by SSH or Console of ESXi web.

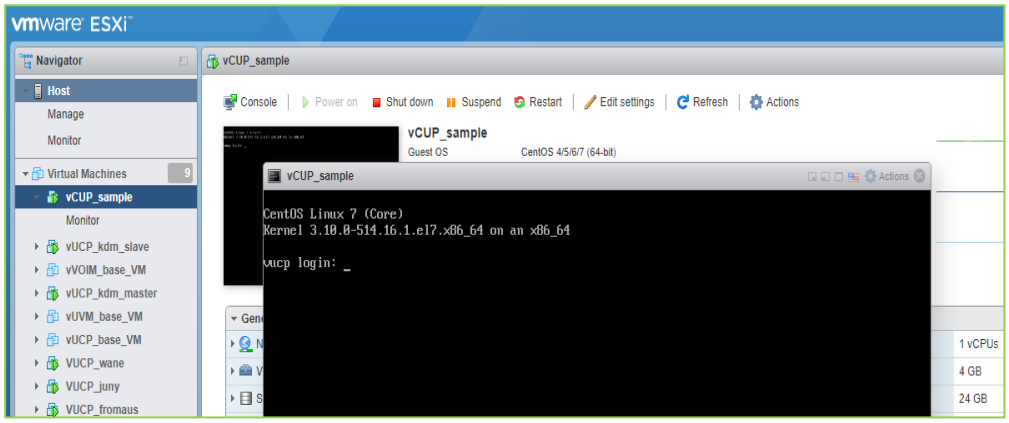
Default login values

- User: root, Password: centos4vucp

You can find the default IP address. Refer to chapter 0Default IP address.

The console of the ESXi web

You can run the local console by clicking 'Console' or the displayed figure.



SSH

You can access the virtual machine by SSH application such as putty. Use default SSH port number 22(vMCIM: 60022). If you want to enable or disable the SSH service, you can do it by the below command after login.

- Disable SSH

  # systemctl stop sshd.service

  # systemctl disable sshd.service
- Enable SSH

  # systemctl start sshd.service

  # systemctl enable sshd.service

3.8.5 Changing Network Settings

The IP address must be changed through console or SSH. (Secure Shell) Because this process is related to Serial Number, you must change network settings to the confirmed values.

Default IP address

When you create a new virtual machine using vUCP OVF files, each machine has the following default IP addresses. When starting, if a duplicate IP address exists, each machine cannot run correctly. Therefore, you should change them by CLI command after deployment.

vUCP

- Virtual Machine IP address: 10.10.10.2
- Subnet mask: 255.255.0.0
- Router IP address: 10.10.10.1

vUVM

- Virtual Machine IP address: 10.10.10.3
- Subnet mask: 255.255.0.0
- Router IP address: 10.10.10.1

vVOIM

- Virtual Machine IP address: 10.10.10.4
- Subnet mask: 255.255.0.0
- Router IP address: 10.10.10.1

vMCIM

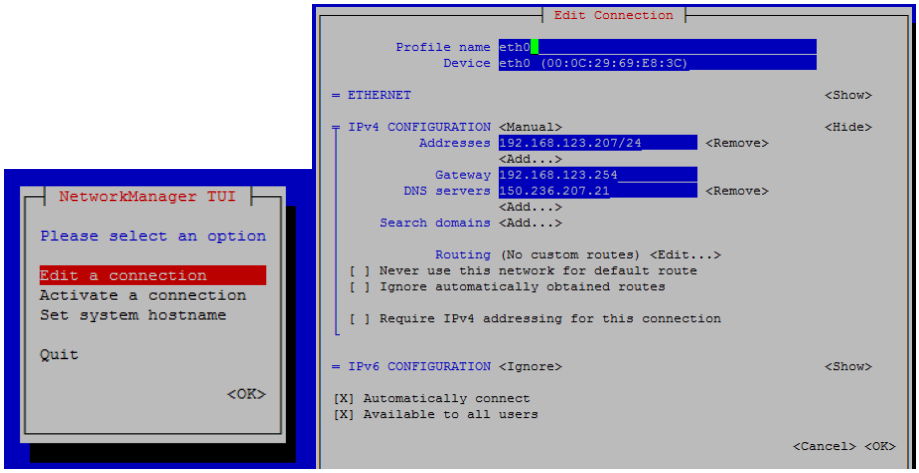
- Virtual Machine IP address: 10.10.10.9
- Subnet mask: 255.255.255.0
- Router IP address: 10.10.10.1

vVOIMT

- Virtual Machine IP address: 10.10.10.5
- Subnet mask: 255.255.255.0
- Router IP address: 10.10.10.1

Changing IP address

Input 'nmtui' and press enter key. When the following figure is displayed, configure the network settings of eth0.



Note:

You can set the system hostname, but it is optional. The vMCIM uses another method. Refer to7.1.4vMCIM Installation.

Changing root password

Input the 'passwd' and press enter key. Then you can change the root password and remember the new root password. Otherwise, you cannot access virtual machines to change IP addresses.

Restarting the Virtual Machine

After changes, input 'restart' and press enter key.

3.9 Reference Documents

Refer to the VMware related documents in the below URL

https://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-6-pubs.html

- vSphere Installation and Setup Guide
- vSphere Software Download

Refer to the vUCP related documents on the GPS website

https://partner.ericssonlg-enterprise.com

- vUCP Manuals
- Software Download(OVF)
- Upgrade Software Download(ROM)
- License Portal Link

4 Amazon Web Services Virtual Machines

From Unified version 3.5, vUCP is supported as AWS virtual machines, referred to as 'instances.' Each AWS instance is created using the below resources;

Region and Availability Zone

Each region is completely independent. Each Availability Zone is isolated, but the Availability Zones in a region are connected through low-latency links. This achieves the greatest possible fault tolerance and stability.

Machine Instance

This is serviced as Amazon Elastic Compute Cloud (Amazon EC2). AWS EC2 provides scalable computing capacity in the Amazon Web Services (AWS) cloud. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. AWS provides some types of machine instances (https://aws.amazon.com/ec2/instance-types). The type should be selected according to the requirements of vUCP.

Amazon Machine Image (AMI)

AWS supports Amazon Machine Image(AMI). AMI provides the information required to launch an instance, which is a virtual server in the cloud. To create instances for the service of the vUCP system, you have to select one of provided public AMIs such as vUCP, vVOIM/vVOIMT, vMCIM, and vUVM.

Disk Storage

Amazon EC2 provides you with flexible, cost-effective, and easy-to-use data storage options for your instances. EC2 Instance for vUCP systems will use EBS (Elastic Block Storage), and the storage is already defined and associated with the virtual machine. You can select the type of EBS volume while creating an EC2 instance. Refer to the Amazon EBS volume types in the below URL;https://aws.amazon.com/ebs/details/?nc1=h_ls

Security Groups

This acts as a virtual firewall for your instance to control inbound and outbound traffic. When you launch an instance in a VPC, you can assign up to five security groups to the instance. For each security group, you add rules that control the inbound traffic to instances and a separate set of rules that control the outbound traffic.

Elastic IPs

An Elastic IP address is a static IPv4 address designed for dynamic cloud computing. An Elastic IP address is associated with your AWS account. An Elastic IP address is a public IPv4 address, which is reachable from the internet.

Virtual Private Cloud (VPC)

Amazon Virtual Private Cloud (Amazon VPC) enables you to launch AWS resources into a virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS. This document does not cover the configuration of the customer's VPC.

The process of combining the elements above is referred to as 'launching an instance.' At each process, you should define details of the components according to the AWS menus.

This section outlines the steps required to install vUCP systems. Before that, you have to select the AWS region.

Installer and Maintainer Requirements

In addition to iPECS training, the installer must also have certified training on the specific virtual platform type or be supported by someone who has that certification. The same requirement applies to the system maintainer.

4.1 Profile of Virtual Machine

The instance of vUCP, vUVM, vMCIM, and vVOIM/vVOIMThas the following default value.

vUCP

- Instance type: t2.micro
- HDD: 8G Bytes (Application) + 1G Bytes (DB data) + 16G Bytes (Voice data, Higher SW version 5.0)
- Network: 1 Ethernet, DHCP

vUVM

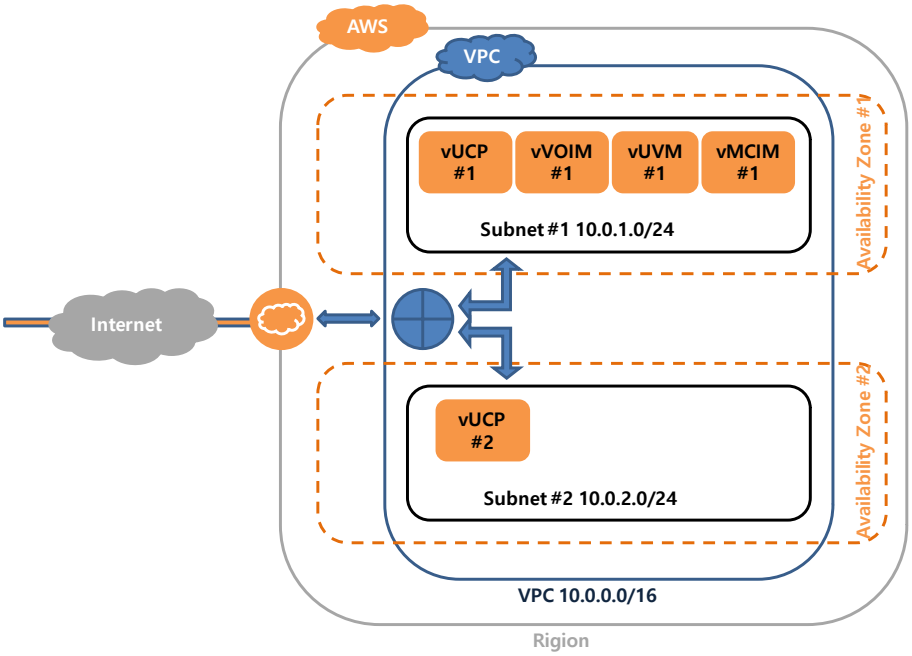
- Instance type: t2.micro
- HDD: 8G Bytes (Application) + 16G Bytes (Voice data)
- Network: 1 Ethernet, DHCP

vVOIM, vMCIM, vVOIMT

- Instance type: t2.micro
- HDD: 8G Bytes (Application)
- Network: 1 Ethernet, DHCP

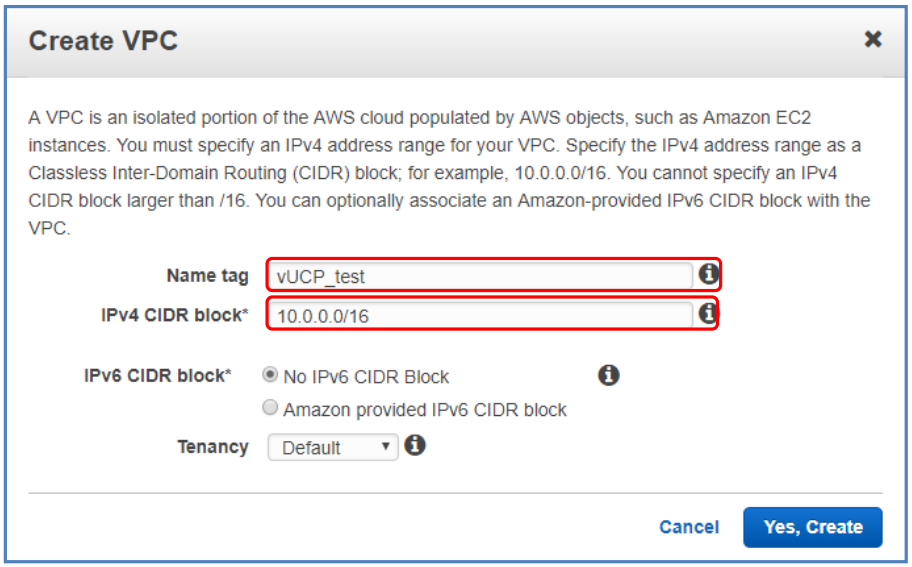
4.2 Creating VPC

The following is a possible VPC configuration for the vUCP system. You can create a VPC for your own purpose. This document does not cover the configuration of the customer's VPC because the configuration of VPC varies according to the customer's needs.



4.2.1 Create VPC

- VPC > Your VPCs > Create VPC >Input ”Name tag” and “IPv4 CIDR block”> Click “Yes, Create”
  - Input' Name tag' and 'Ipv4 CIDR block'.



4.2.2 Create Subnet

- VPC> Subnets > Create Subnet
  - Input' Name tag' and select 'VPC' (4.2.1*Create VPC*).
  - Select 'Availability Zone' and input 'Ipv4 CIDR Block'. Then click 'Create.'
  - Repeat at each Availability Zone.

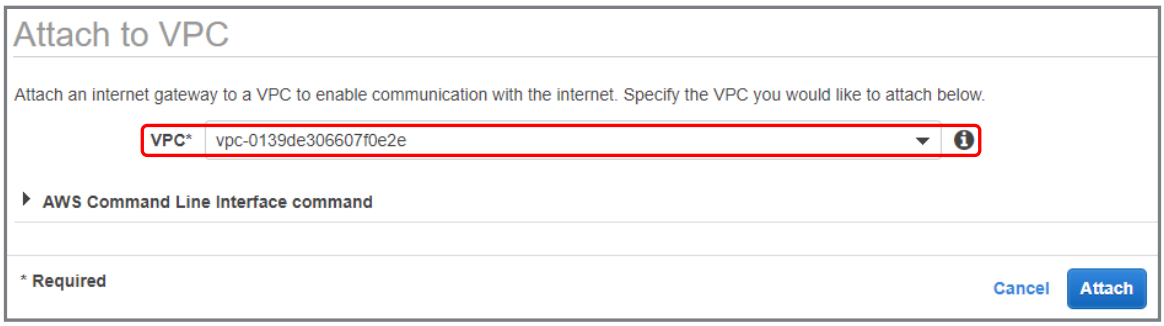
Subnet #1

Subnet #2

4.2.3 Create Internet Gateway

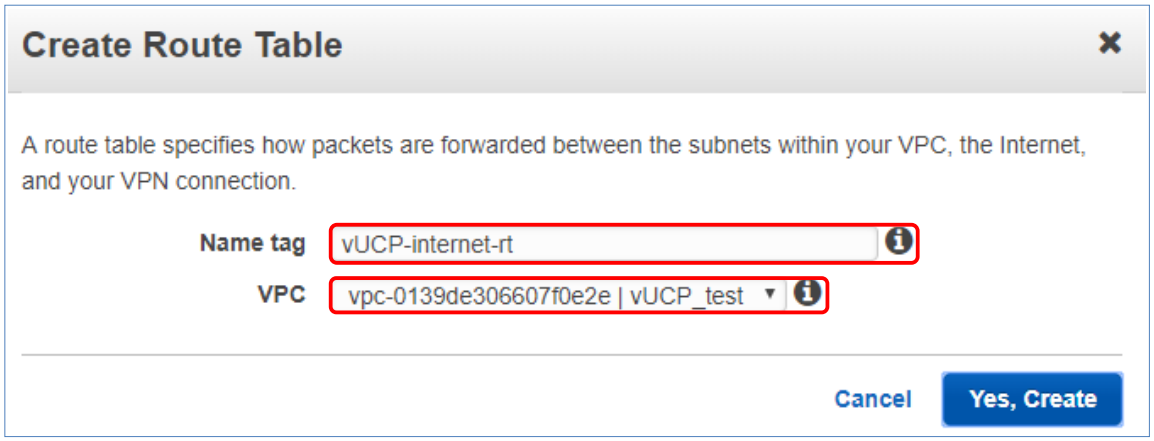
- VPC > Internet Gateways > Create Internet Gateway > Select ‘created igw’ > Attach to VPC
  - Input' Name tag' and click 'Create.'

  - Select 'VPC' (4.2.1*Create VPC*) and click 'Attach.'

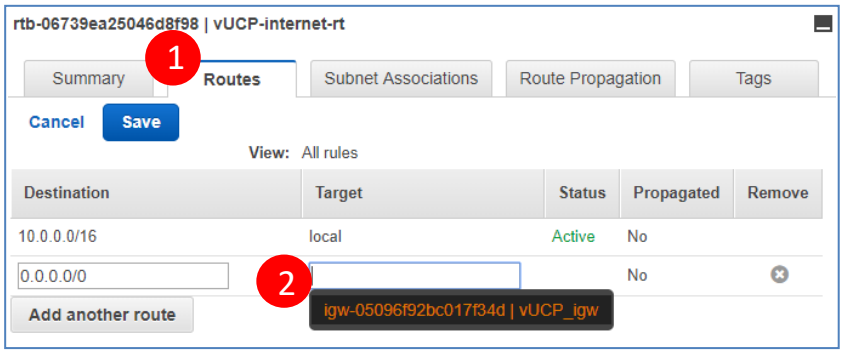


4.2.4 Create Route Table

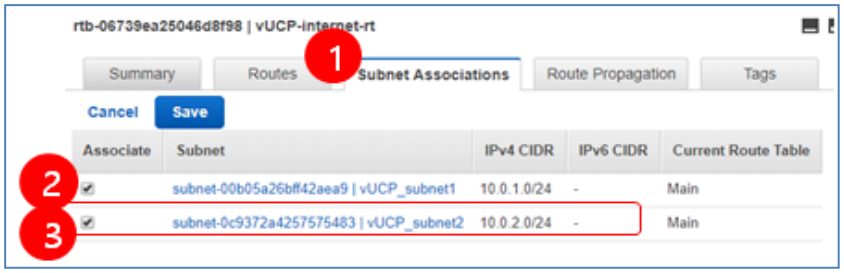
- VPC > Route Tables > Create Route Tables > Select ‘mydemovpc-internet-rt’ > Routes > Subnet Associations
  - Input' Name tag' and select 'VPC' (4.2.1*Create VPC*).



- Click 'Routes' and Input' Destination' and 'Target' (0*Create Internet Gateway*).

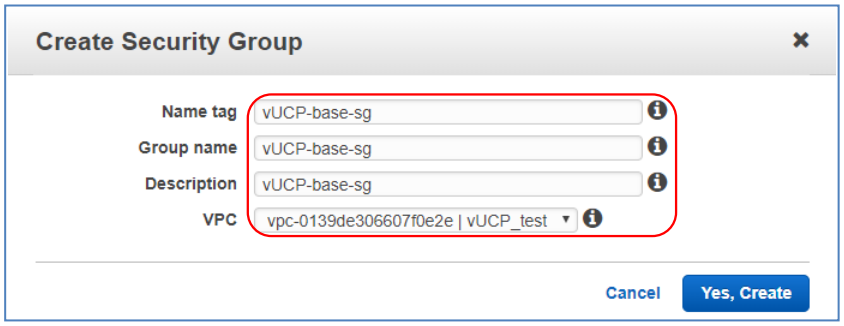


- Click 'Subnet Associations' and associate all subnets.



4.2.5 Create Security Groups

- VPC > Security Groups > Create Security Group > Select ‘vUCP-base-sg’ > Inbound Rules >Edit
  - Input' Name tag', 'Group name', and 'Description'.
  - Select VPC(4.2.1*Create VPC*).



- Click 'Inbound Rules' and add your rules.

Above 'Inbound Rules' is created to make the test easy. Therefore, you have to add the rules for your purpose.

Before launching any instances, you should create security groups. When launching a new instance, you can select the security group that should be used.

- ✓ When launching a new instance, you should highly restricted security group that allows minimum access. For example, one allows access from your IP address and uses HTTPS (port 443) and SSH (port 22) access.
- ✓ Once the instance is ignited, and an initial configuration is completed, you can change the security group of that instance.

Refer to the Security Groups in the below URL;

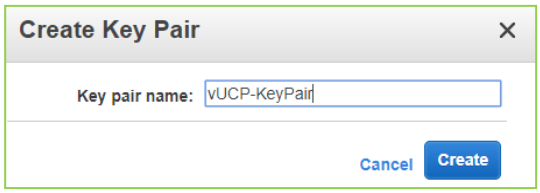
https://docs.aws.amazon.com/vpc/latest/userguide/VPC_SecurityGroups.html

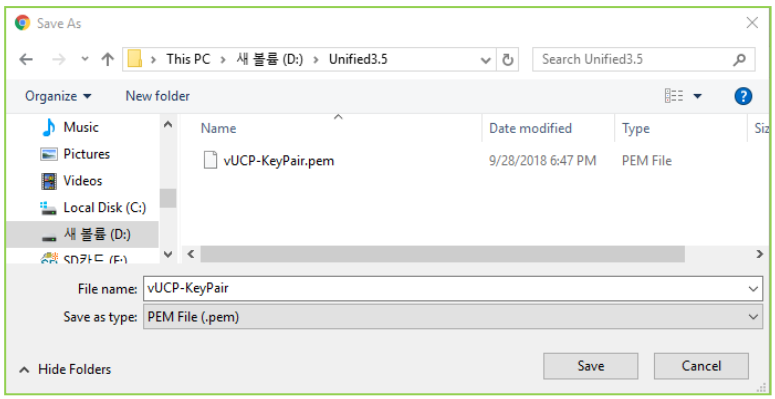
4.3 Launching a New Instance

4.3.1 Create Key pair

Before launching a new instance, you had better created the key pair, which will be used to access the instance. Of course, it might be created during the launching of a new instance.

- EC2 > Key Pairs > Create Key Pair> Input "Key pair name" and click "Create"> Save the key file to the local disk.





The key file should be kept secure because it is used to access your virtual machine. When it is leaked, all your virtual machines would be at risk. And if you lose it, you will not be able to access your virtual machines by SSH.

4.3.2 Prerequisite

If you want to use AMI images of the iPECS system outside of the 'Asia Pacific (Seoul)' region, you should copy AMI images to your region. Using the AMI Copy function, it is only possible to copy those AMI images that belong to your account. It is not possible to copy AMI images belonging to others. Refer to the below link.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/CopyingAMIs.html

To get around this, you can:

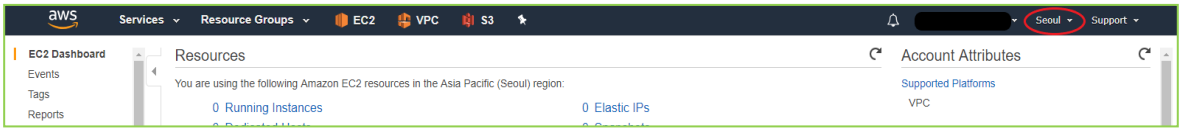
1) Launch an instance in the 'Asia Pacific (Seoul)' region with the wanted AMI. Note that you had better just launched and stop it before allocating an EIP because an initial setup or registration is useless. Refer to 4.3.3Launching a New Instance.
2) Create a new AMI from your instance. Refer to 4.5Creating an AMI image.
3) Copy that AMI to your desired new region. Refer to 4.6Copying an AMI image.
4) Launch an instance in your target region with your copied AMI. Refer to 4.3.3Launching a New Instance.
5) If you don't use the instance in any region, delete the original instance, snapshot, and AMI image not to pay an additional charge. Refer to 4.7Deleting unused resources.

The following is a general example of launching a new virtual instance. The exact process may vary because the customer's requirements are different for VPC and external networks.

4.3.3 Launching a New Instance

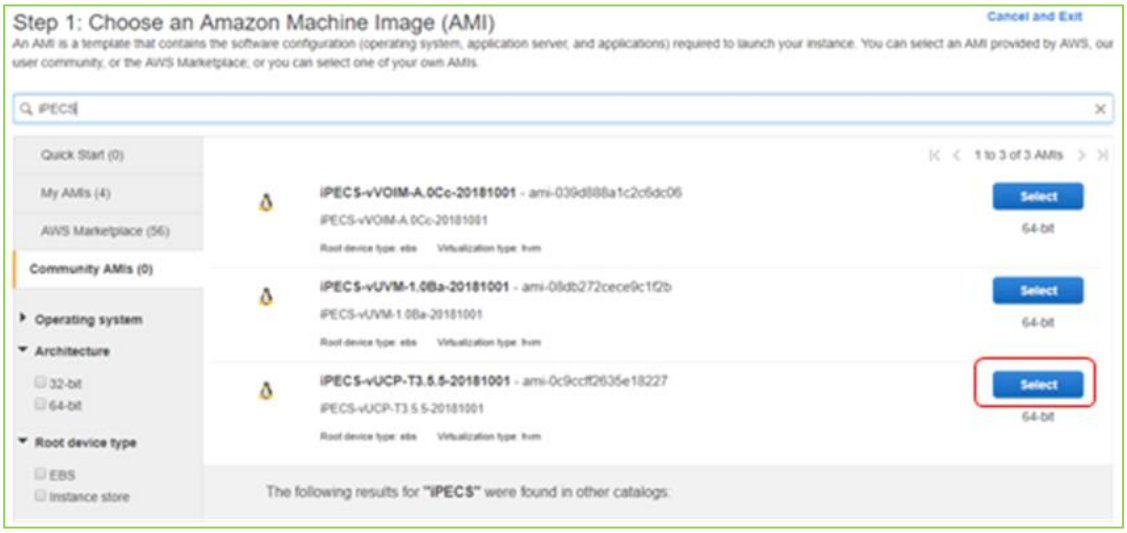
To launch a new AWS virtual machine:

1) Sign in to your AWS account. Click **Services** and select **EC2**.
2) Select the region, for example, **Asia Pacific (Seoul)**. It is recommended that the selected region is closer to the serviced area.

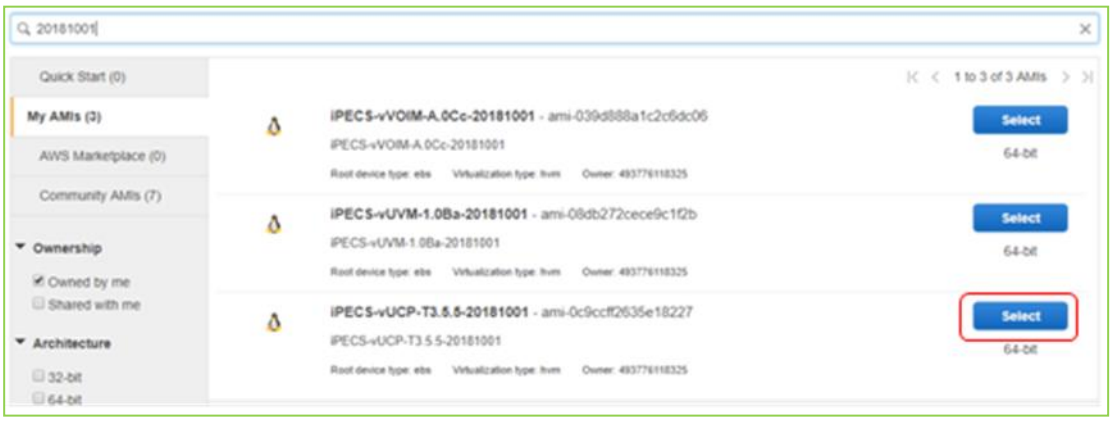


3) Click **Launch Instance**. Select **Community AMIs** and enter **iPECS** as the search string. Note that, outside of **Asia Pacific (Seoul),** you should prepare your own AMI images referring to **4.3.2Prerequisite**. If you already copy the AMI images to your desired AWS region, the AMI image would be displayed in **My AMIs**.
4) Click **Select** where the required AMI is located. The name will show a system name and version. For example, **iPECS-vUCP-R3.5.5** is the AMI for vUCP Release 3.5.5. You also find other systems like **vVOIM/vVOIMT, vUVM, and vMCIM**.

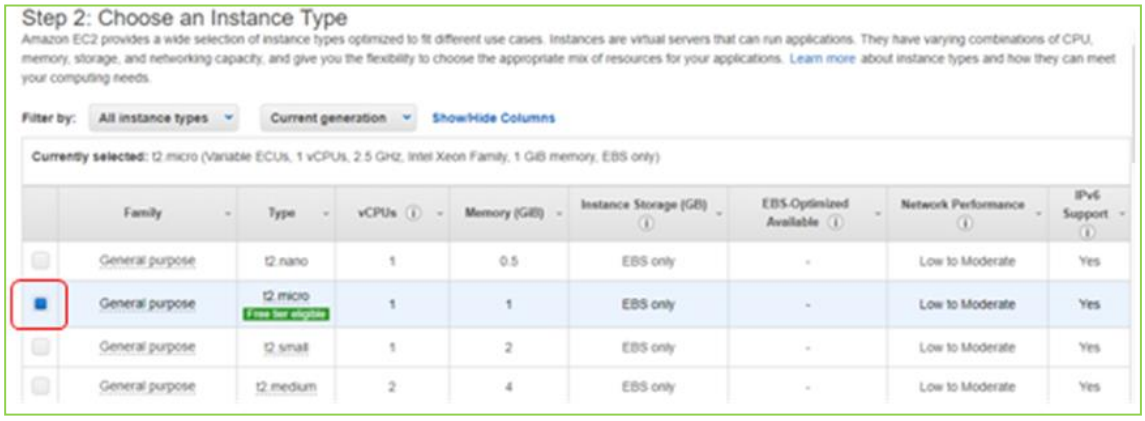
- Case 1: Search results in Community AMIs in the Seoul region.



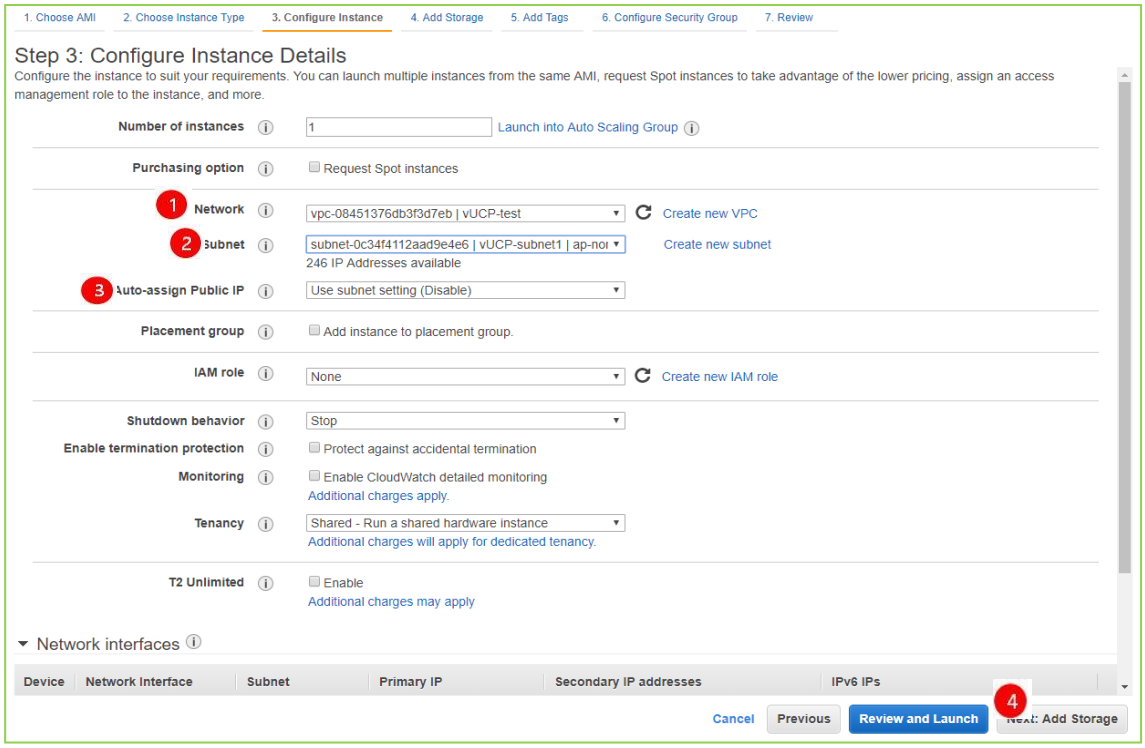
- Case 2: Copied AMI images in **My AMIs in your region.**



5) Select a machine instance that matches the 4.1Profile of Virtual Machine and click "Next". The "t2.micro" is used for the iPECS system.



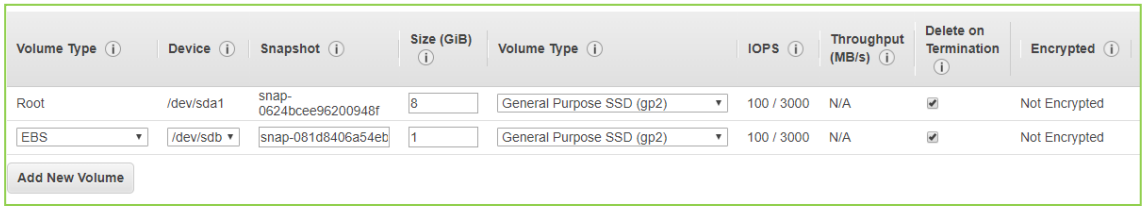
6) Click Next: Configure Instance Details.



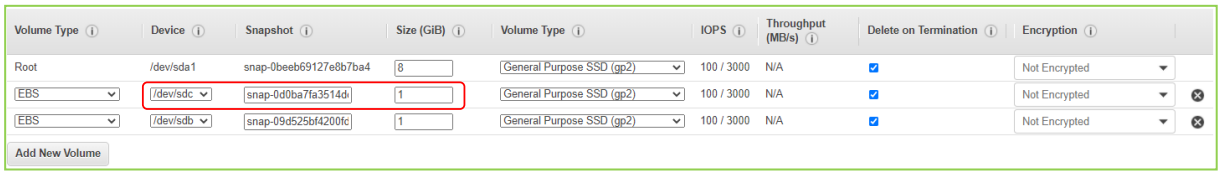
- Select the customer's VPC and the subnet.
- Select '**Use subnet setting (Disable)**' as Auto-assign Public IP. Because vUCP systems use a persistent public IP address, you should use an Elastic IP address (EIP). You can allocate it to your EIP and associate it to your instance after launch.

7) Click Next: Add Storage.

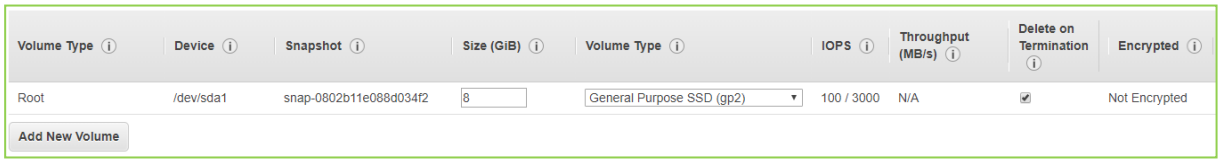
- vUCP (Lower SW version 5.0): Do not change



- vUCP (Higher SW version 5.0): Change the disk size of '/dev/sdc' for voice dat



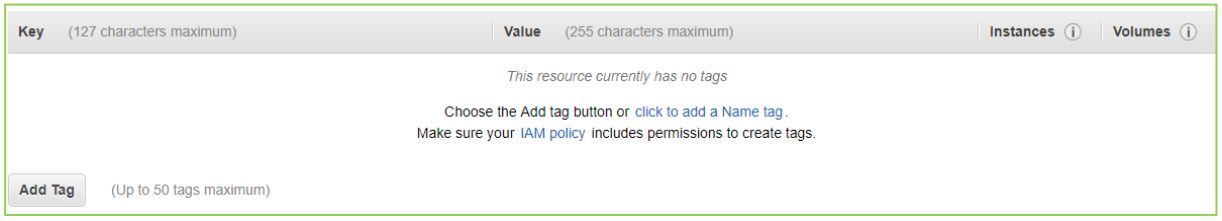
- vVOIM/vVOIMT, vMCIM: Do not change



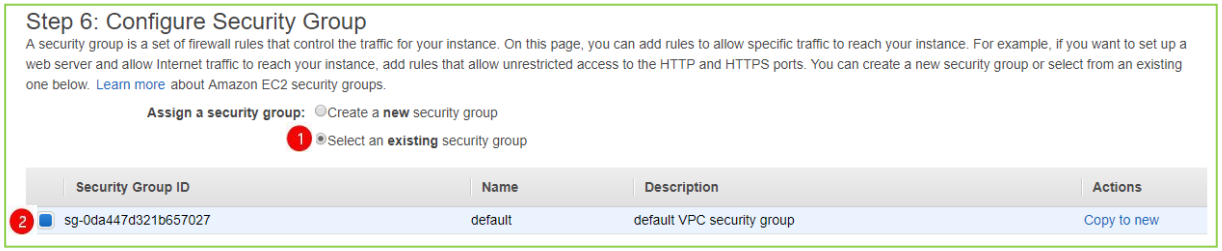
- vUVM: Change the disk size of '/dev/sub for voice storage according to the recording time.

	100 hours	200 hours	300 hours	400 hours	500 hours
Disk Size	3 GBytes	6 GBytes	9 GBytes	12 GBytes	15 GBytes

8) Click **Next: Add Tags.** Enter any tags that you want to be associated with this instance. Tags can be displayed and used in other EC2 menus to display sort, and group matching resources



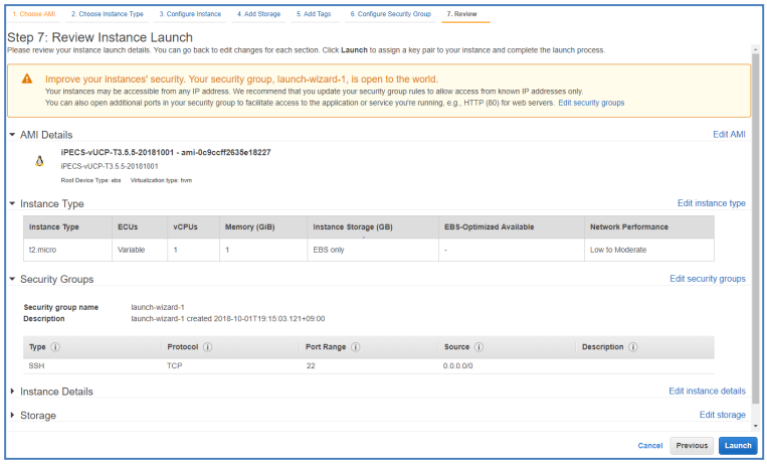
9) Click **Next: Configure Security Group.** Select the system installer's security group that you previously created in **4.2Creating VPC**.



Note: Allows minimum hosts and protocols such as HTTPS (port 443). This is needed until the initial configuration is completed because the default passwords are applied in the new instances.

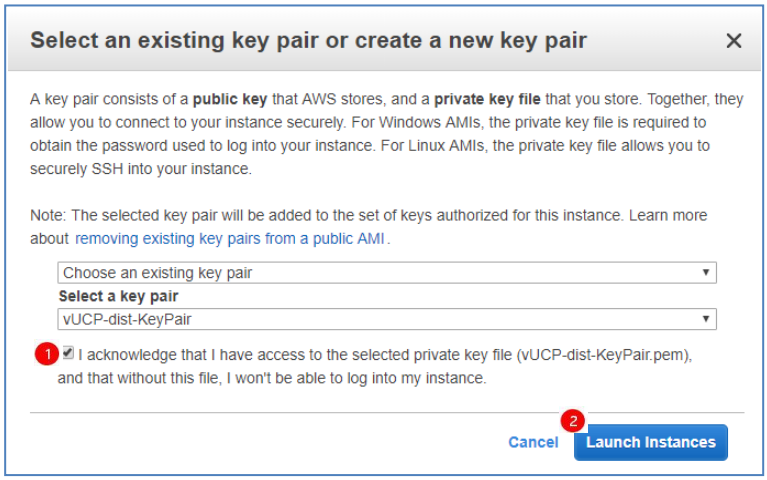
If you don't select a created group, a default security group would be created.

10) Click **Review and Launch**. Check all details. If so, click **launch**.



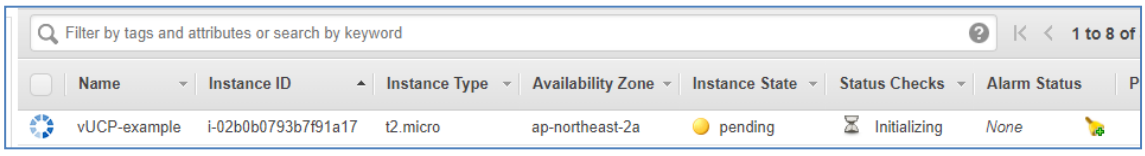
Pop up: Select an existing key pair or create a new key pair.

- This key file provides a security certificate for secure SSH access to the virtual machine. You can use the key pair file, which is created in 4.3.1 Create Key pair.
- If you want to create a new key pair, click Download Key Pair and make sure that you stored it in a safe place.



11) Click Launch Instances.

12) If all is successful, click **View Instances**, or select **Services > EC2 > Instances**. The new virtual machine should be displayed in the list of your instances.

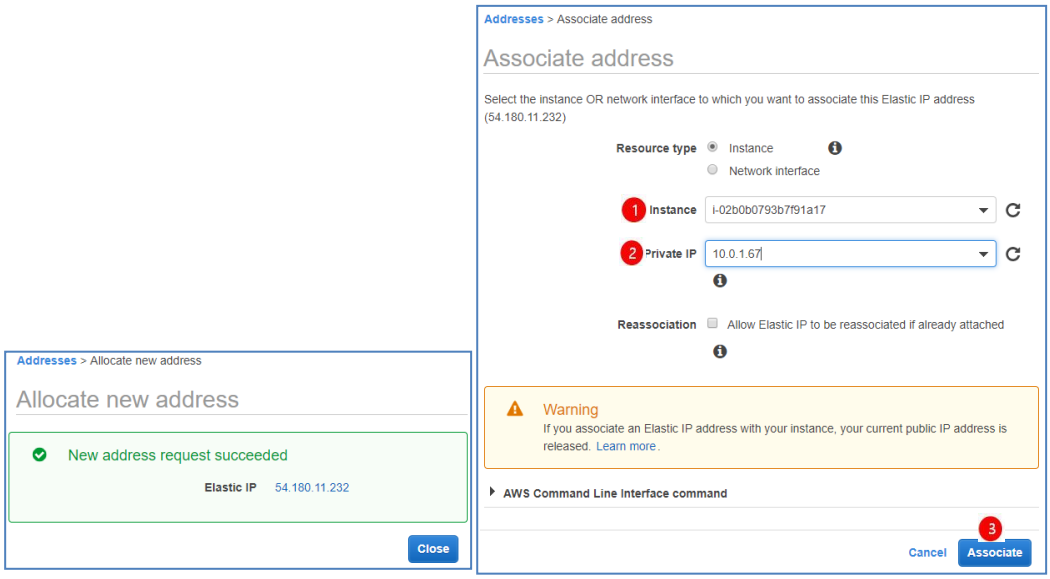


13) The machine starts by performing initial formatting and partitioning of the storage. It takes approximately 5 to 10 minutes to complete.

14) Allocate **EIP.**

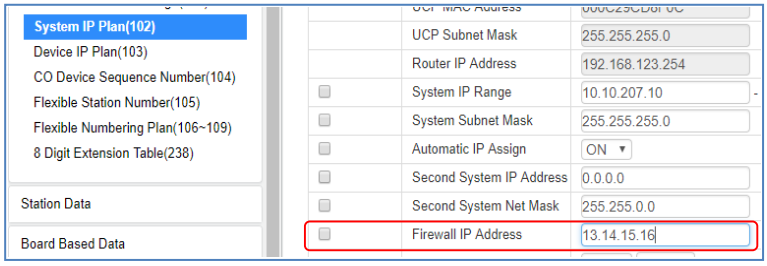
- Select Services > EC2 > Network & Security > Elastic IPs.
- Click Allocate new address.
- Click Allocate.
- Click Close.

- Mark new created EIP, and then select Actions > Associate address.
- Set Instance and Private IP to new created.
- Click Associate.

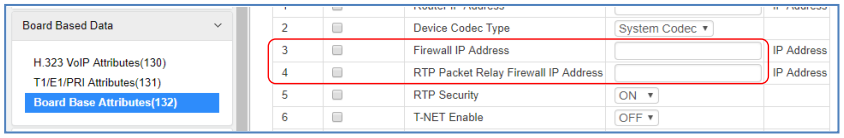


Note

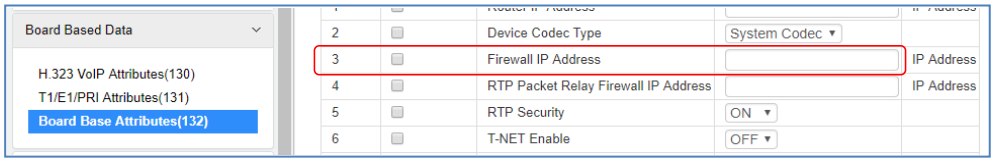
- vUCP: Need EIP for external access. It should be used as the firewall IP address in PGM102. Therefore, you should generate a system serial number after setting the firewall IP.



- vVOIM/vVOIMT: Need EIP for external access. It should be used as the firewall IP address and RTP Packet Relay Firewall IP Address in PGM132.



- vUVM: Need EIP for external access. It should be used as the firewall IP address in PGM132.



- vMCIM: Not need EIP, but you can use it for your purpose.

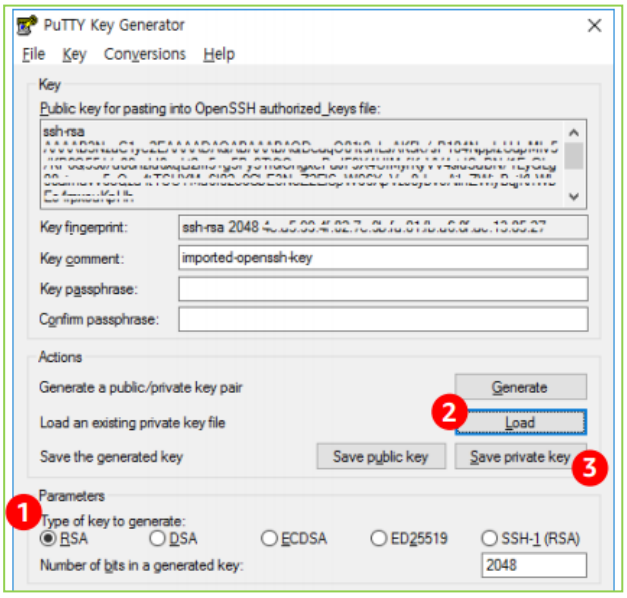
15) Proceed with **4.4 Connecting to Virtual Machine** and **6 License and Serial Number.**
   - You can access the vUCP systems through the assigned public IP address.
   - The private IP address is assigned automatically and is used within the custom VPC.
   - Therefore, in the case of AWS, you don't need to configure the IP address of the virtual machine, but the EIP address is treated as the system's firewall IP address because VPC is used.

4.4 Connecting to Virtual Machine

After Power on, you can access the virtual machine by SSH. Note that you should use the public IP address of the EC2 instance and the default SSH port number is 22.You should use your private key(refer to 4.3.1Create Key pair), which was obtained from AWS (PEM ► PPK);PuTTYgen and PuTTY are needed.

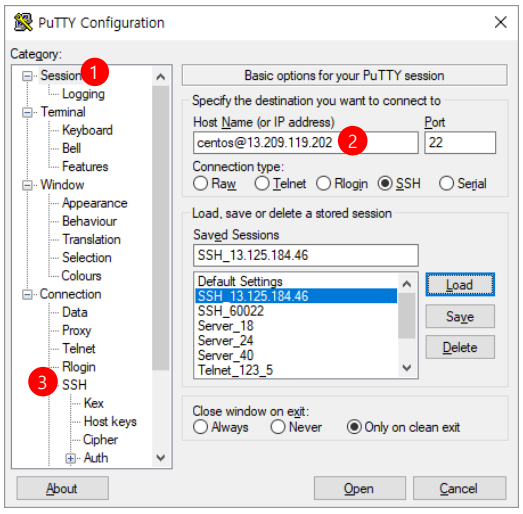
Private key creation

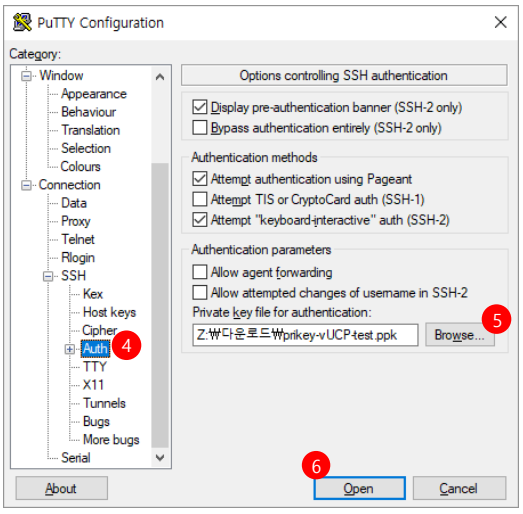
1) Start PuTTYgen.
2) Select [RSA (SSH-2)]
3) Load the saved PEM file by [Load]
4) Covert to the PPK fileby[Save private key]



PuTTY Session

1) Start PuTTY
2) Select [Category > Session] and input “centos@publicIP”
3) Select [Category > Connection > SSH > Auth], lick [Browse] and select PPK file
4) Click [Open]





The login user is "centos," and no password was needed due to the authentication method.

Remember that you should add "sudo" before the shell command because the current user is "centos" and does not have 'root' permission. For example, "***sudo*** systemctl stop watchdog."

Changing Network Settings

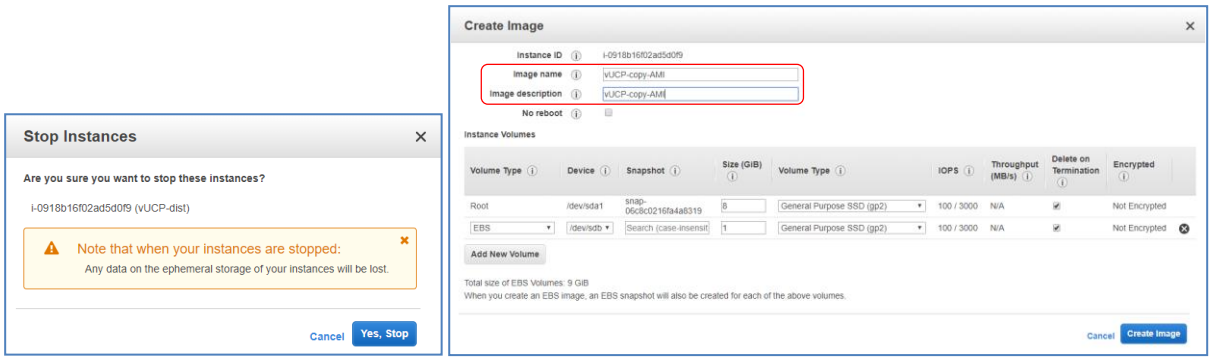
You don't need to change the network settings of EC2 Instance if you use the VPC and EIP. The assigned values are not changed until the instance settings are not varied.

Note: if you use EIP for vUCP, the firewall IP address of vUCP would be the EIP. If you use your own network, such as NAT, you should set a correct value as the firewall IP of vUCP.

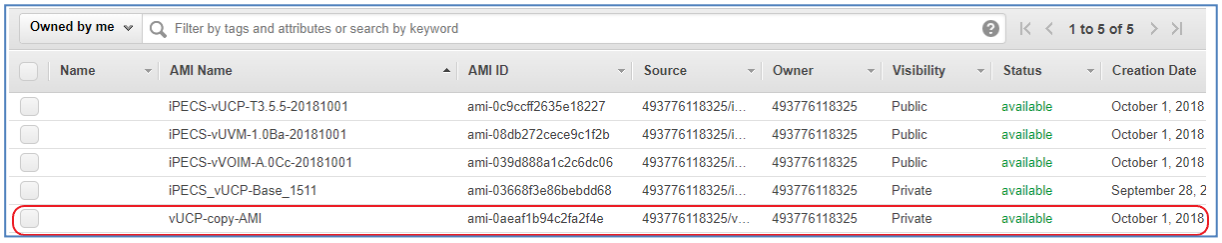
4.5 Creating an AMI image

After launching an instance, you can create your custom AMI image.

- EC2 > Instance > “Select the instance” >‘Actions > Instance State > Stop’>‘Actions >Image >Create Image’



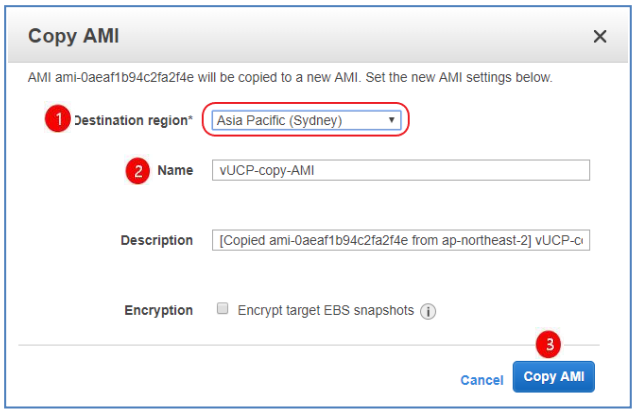
You can find the created AMI image in "EC2 > IMAGES> AMIs".



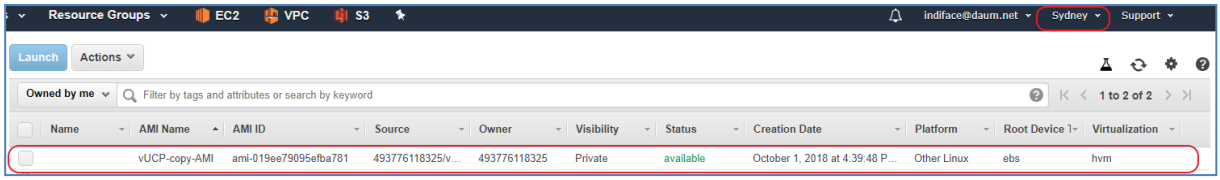
4.6 Copying an AMI image

To use AMI images in other AWS regions, you have to copy them to other AWS regions.

- EC2 > IMAGES> AMIs >“Select the AMI image”>Actions >Copy AMI> “Select Destination region”>Click “Copy AMI” > Click “Done”



You can find the copied image in "EC2 > IMAGES> AMIs" in the destination region.

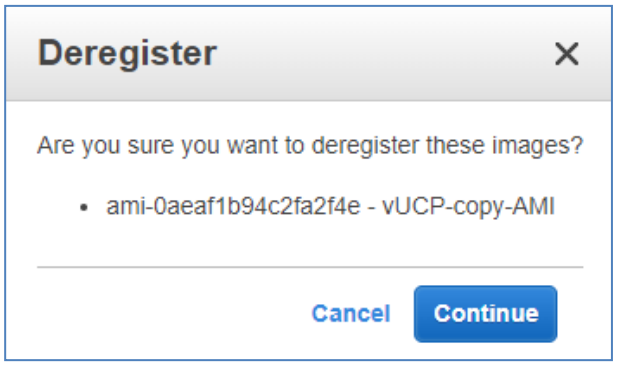


4.7 Deleting unused resources

After copying AMI images to other AWS regions, you had better remove the resources like AMI images, snapshots, instances, and volumes, which are not used anymore in the 'Seoul' region. And after launching AMI images in other AWS regions, you had better also remove the resources like AMI images and snapshots. Otherwise, you might have to pay an additional charge.

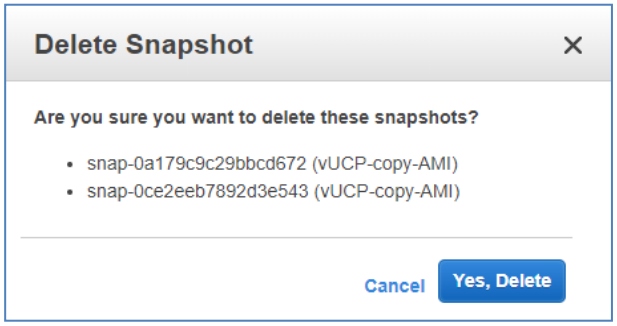
4.7.1 Deregister AMI images

- EC2 > Instance > “Select the instances” > Actions >Deregister> Click “Continue”



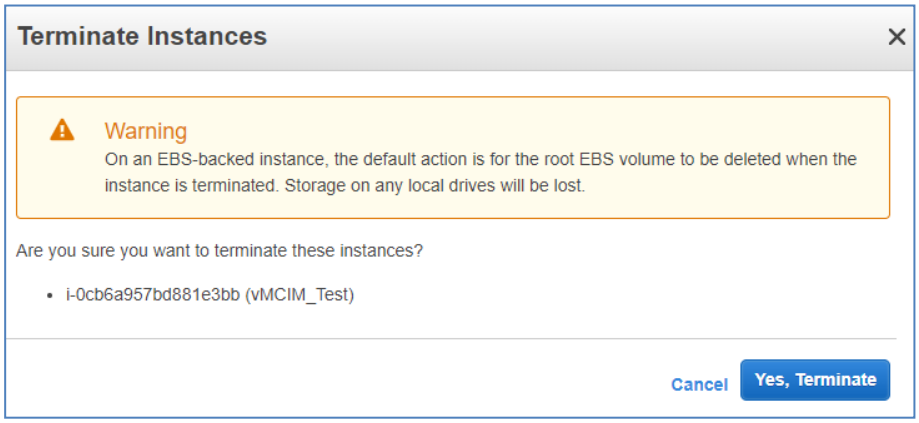
4.7.2 Deleting Snapshots

- EC2 >Elastic block store> Snapshots >“Select Snapshots” > Actions >Delete> Click “Yes, Delete”



4.7.3 Deleting Instances

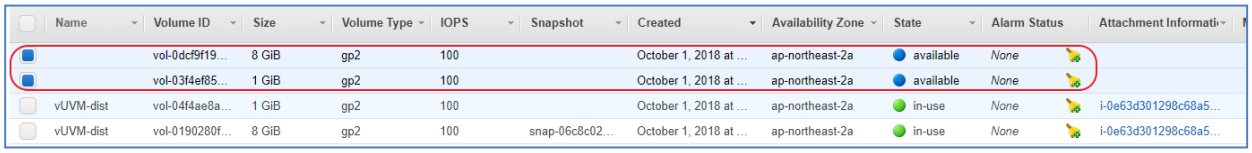
- EC2 > Instance > “Select the instances” > Actions > Instance State >Terminate> Click “Yes, Terminate”

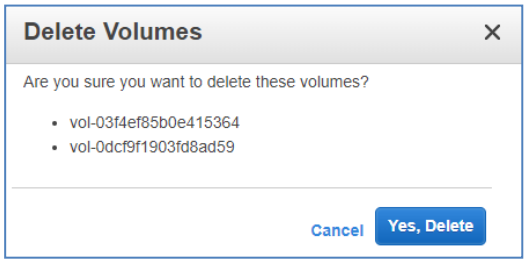


4.7.4 Deleting Volumes

After deleting instances, detached volumes might be left. You had better remove them to avoid an additional charge.

- EC2 >Elastic block store> Volumes >“Select Volumes” > Actions >Delete Volumes > Click “Yes, Delete”

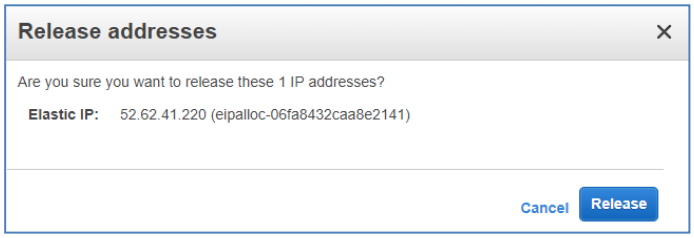




4.7.5 Deleting EIPs

If you don't need EIPs anymore after deleting instances, you had better remove them to avoid an additional charge.

- EC2 > Elastic IPs >“Select EIPs”> Actions > Release addresses > Click “Release”



5 Microsoft Azure

From Unified version 6.0, vUCP is supported as MS Azure virtual machines, referred to as 'instances.' Each Azure Instance is created using the below resources;

Subscription

A customer's agreement with Microsoft enables them to obtain Azure services. The subscription pricing and related terms are governed by the offer chosen for the subscription.

Resource Group

A container is that holds related resources for an Azure solution. The resource group includes those resources that you want to manage as a group. You decide which resources belong in a resource group based on what makes the most sense for your organization.

Virtual Machine

The software implementation of a physical computer is that runs an operating system. Multiple virtual machines can run simultaneously on the same hardware. In Azure, virtual machines are available in a variety of sizes (https://docs.microsoft.com/en-us/azure/virtual-machines/sizes). The type should be selected according to the requirements of vUCP.

Azure Storage Explorer

Microsoft Azure Storage Explorer is a standalone app that makes it easy to work with Azure Storage data on Windows, macOS, and Linux.

Storage Explorer enables users to upload, download, and copy managed disks and create snapshots (https://docs.microsoft.com/en-us/azure/virtual-machines/disks-use-storage-explorer-managed-disks). Because of these additional capabilities, you can use Storage Explorer to migrate data from on-premises to Azure and migrate data across Azure regions.

Managed Disk

Azure-managed disks are block-level storage volumes that are managed by Azure and used with Azure Virtual Machines. Managed disks are like a physical disk in an on-premises server but virtualized. With managed disks, you have to specify the disk size, the disk type, and provision the disk. Once you provision the disk, Azure handles the rest.

The available types of disks are ultra disks, premium solid-state drives (SSD), standard SSDs, and standard hard disk drives (HDD). For information about each individual disk type, see https://docs.microsoft.com/en-us/azure/virtual-machines/disks-types.

Virtual Network

A network provides connectivity between your Azure resources that are isolated from all other Azure tenants. An Azure VPN Gateway lets you establish connections between virtual networks and between a virtual network and an on-premises network. You can fully control the IP address blocks, DNS settings, security policies, and route tables within a virtual network.

Installer and Maintainer Requirements

In addition to iPECS training, the installer must also have certified training on the specific virtual platform type or be supported by someone who has that certification. The same requirement applies to the system maintainer.

5.1 Profile of Virtual Machine

The instance of vUCP, vUVM, vMCIM, and vVOIM/vVOIMT has the following default value.

vUCP

- VM size: Standard B1s (1 vcpus, 1 GiB memory)
- HDD: 8G Bytes(Application) + 1G Bytes(DB data) + 16G Bytes(Voice data, 5.0.0 or Higher)
- Network: 1 Ethernet, DHCP

vUVM

- VM size: Standard B1s (1 vcpus, 1 GiB memory)
- HDD: 8G Bytes(Application) + 16G Bytes(Voice data)
- Network: 1 Ethernet, DHCP

vVOIM, vMCIM, vVOIMT

- VM size: Standard B1s (1 vcpus, 1 GiB memory)
- HDD: 8G Bytes(Application)
- Network: 1 Ethernet, DHCP

5.2 Installation Overview

5.2.1 vUCP

1) Download the software for MS Azure from the GPS portal.
2) Create Subscription and Resource Group
3) Upload VHD disks to MS Azure using 'Microsoft Azure Storage Explorer.'
4) Create Virtual Machine
   - Basics
   - Disks
   - Networking
   - Management
   - Advanced
   - Tags
   - Review + Create
5) Access to vUCP Web and Complete Install Wizard
6) If all IP information is confirmed, create Serial Number
7) Order and Generate (download) licenses from the license portal
8) Upload the license

5.2.2 vUVM and vVOIM/vVOIMT/vMCIM

It is different from vUCP. Serial number and license file are not needed to install

- No serial number
- No license file
- No install wizard

Installation Procedure

1) Download the software for MS Azure from the GPS portal.
2) Create Subscription and Resource Group (Optional: If it doesn't exist)
3) Upload VHD files to MS Azure using 'Microsoft Azure Storage Explorer.'
4) Create Virtual Machine
   - Basics
   - Disks
   - Networking
   - Management
   - Advanced
   - Tags
   - Review + Create

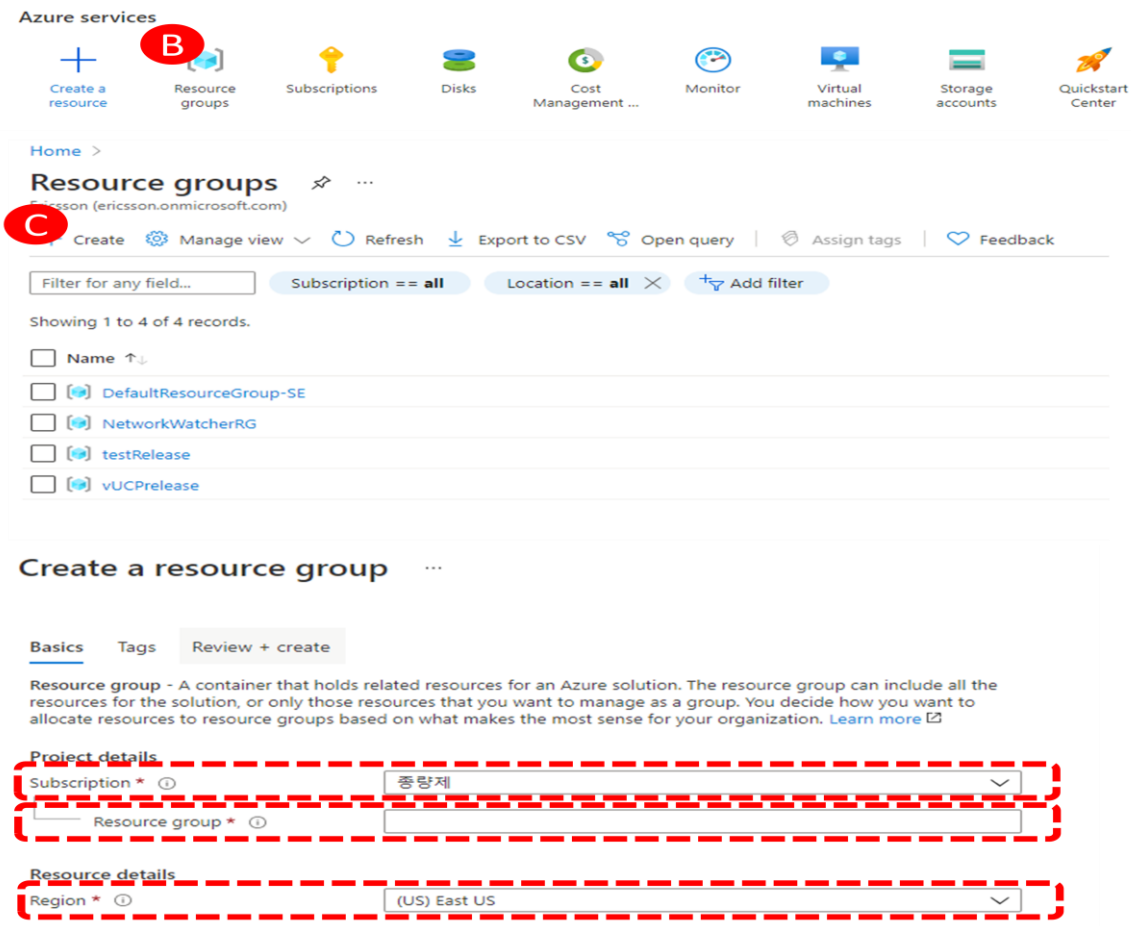
Web access

- HTTP and port 80
- No default password is set. You must change it to the 'Security' page.
- You can find 'MAC address on the 'Home' page.

5.3 Installation Procedure

Virtual Machine installation procedure

1) Sign in with your MS Azure account
2) Create Resource Group
   A. Access Azure Portal
   B. Select 'Resource Groups'
   C. Click 'Create'
      a. Basics Subscription (If it isn't prepared, add a new subscription as 'Pay as you go')
         - Resource group name
         - Region
      b. Tags: Add and Next
      c. Review + create



3) Download the software for MS Azure from the GPS portal.

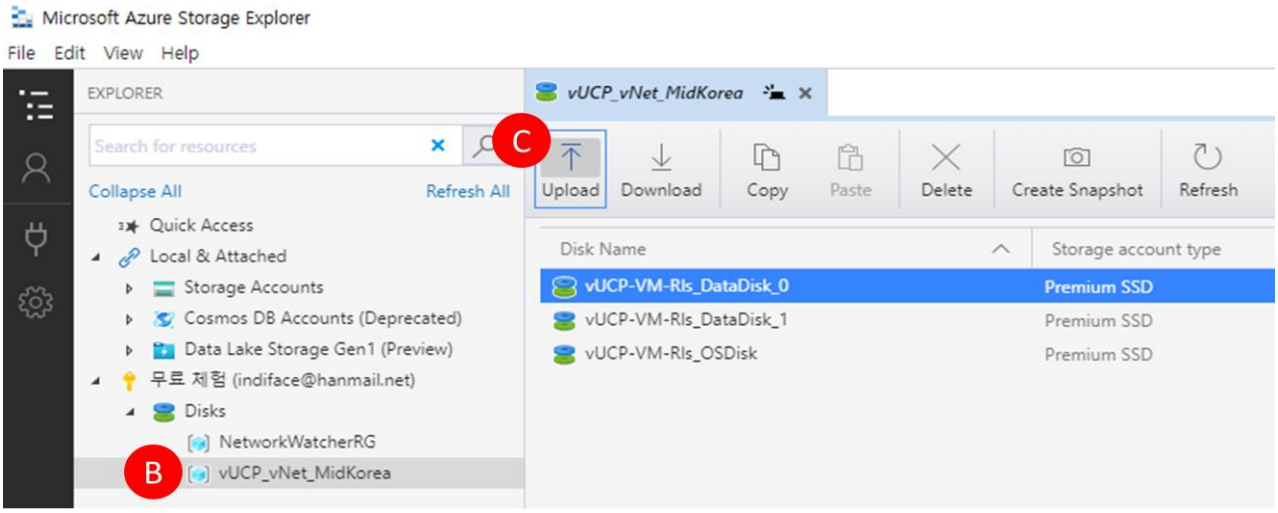
- VHD: Disk files for Azure
  - vUCP – 3 VHD files (os, db, vm)
  - vUVM – 2 VHD files (os, vm)
  - Other VM – 1 VHD file (os)
- ROM files: the upgrade of system application through vUCP web admin.

4) Upload your VHD files to MS Azure: can be uploaded one by one.

A. Open 'Microsoft Azure Storage Explorer' with your Azure account

B. Click 'Disks > your Resource group.'

C. Click 'Upload'



D. Select Source VHD

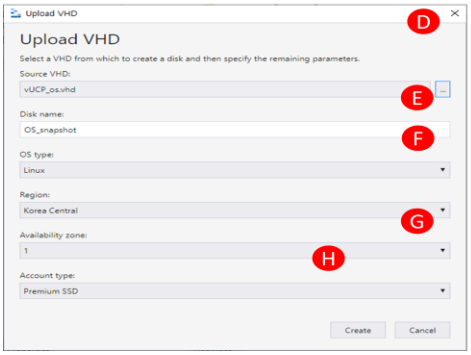
E. Chane OS type to 'Linux.'

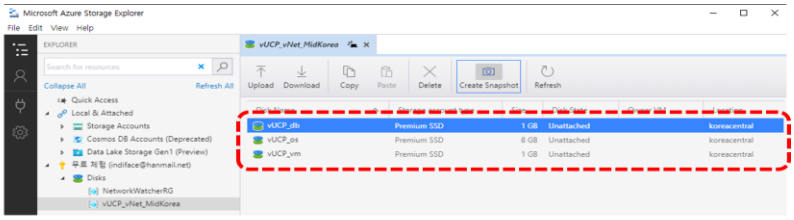
F. Choose your region

G. Choose storage account type

H. Click 'Create'

I. If there is no error, you can see a created disk.





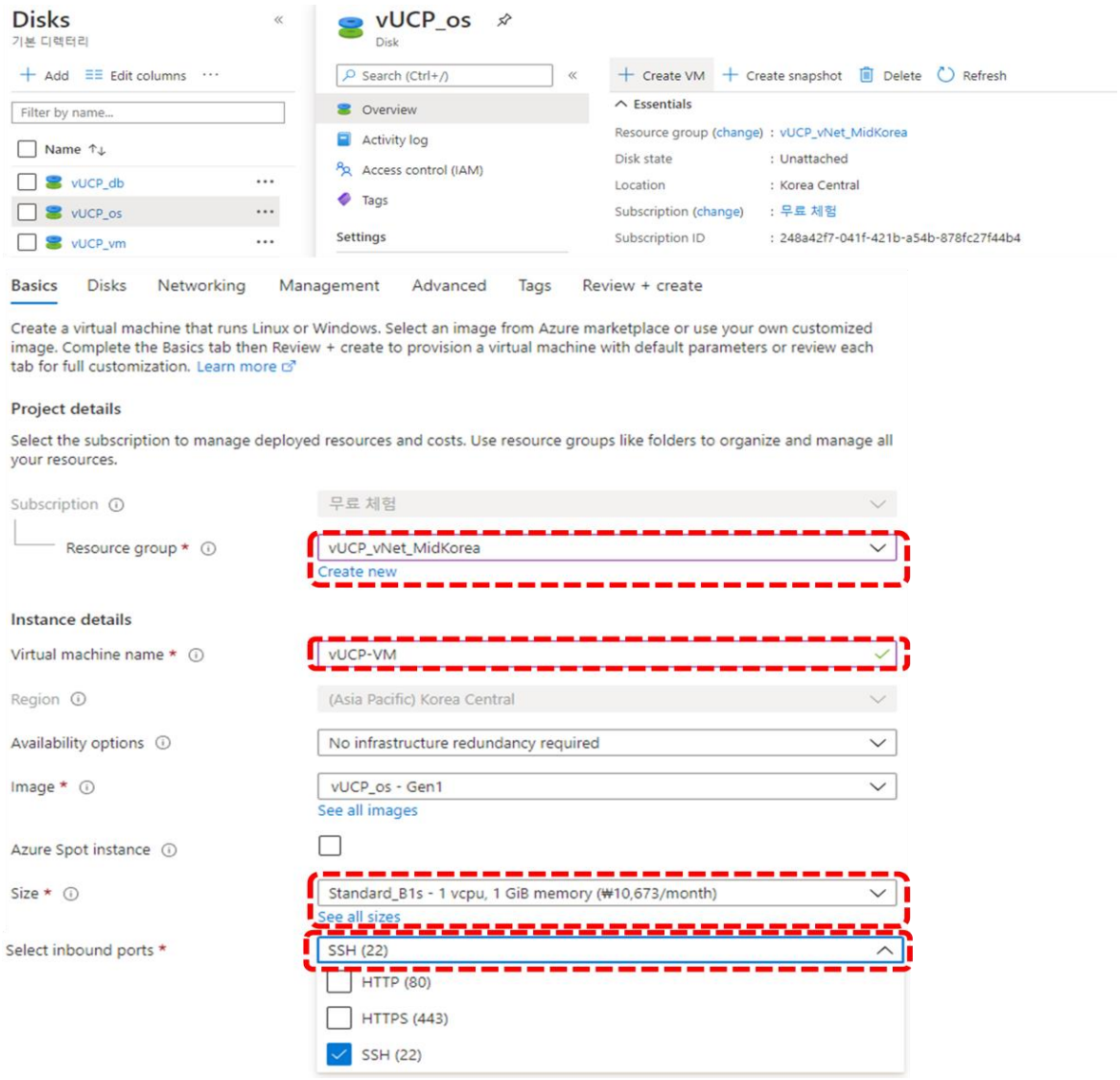
5) Create Virtual Machine

A. Select 'Disks' in Azure Portal

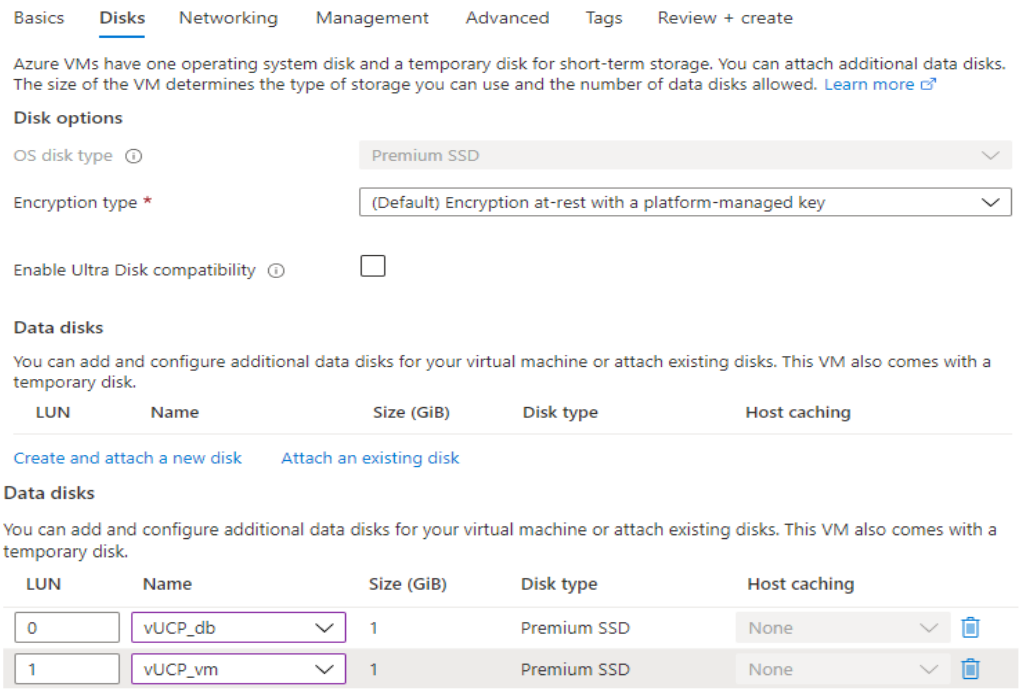
B. Click the uploaded OS disk

C. Click 'Create VM'

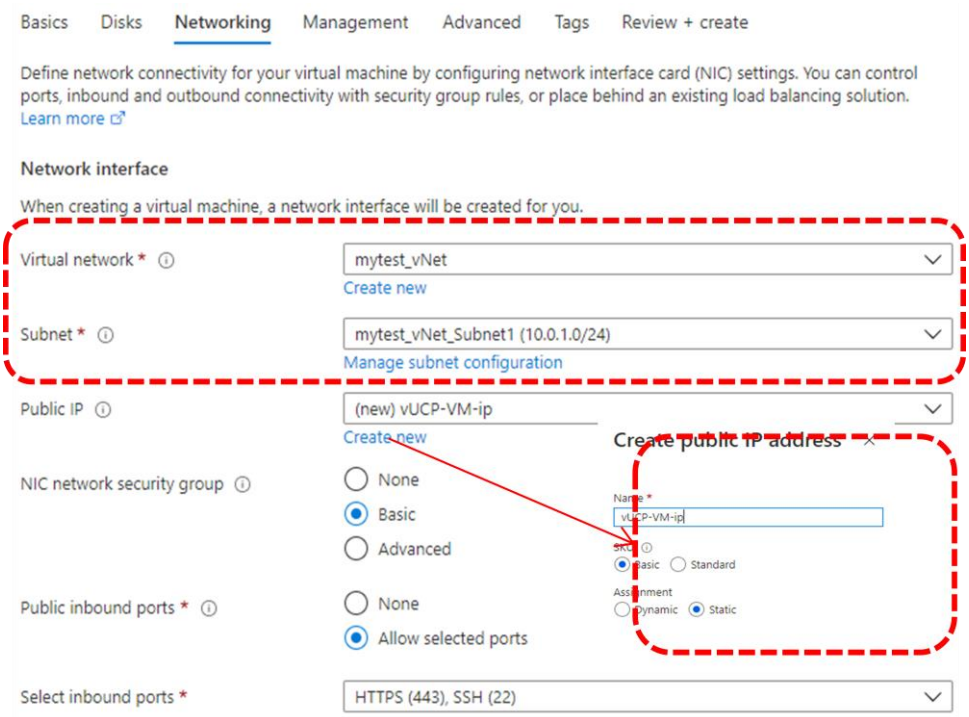
- **Basics**
  - Subscription
  - Resource group
  - Virtual machine name
  - Size
  - Select Inbound ports (vUCP: HTTPS, SSH, Others: HTTP, SSH)



- **Disks**
  - Attach an existing disk
  - vUCP: 0 (db) 1 (vm)
  - vUVM: 0 (vm)
  - Others: no need

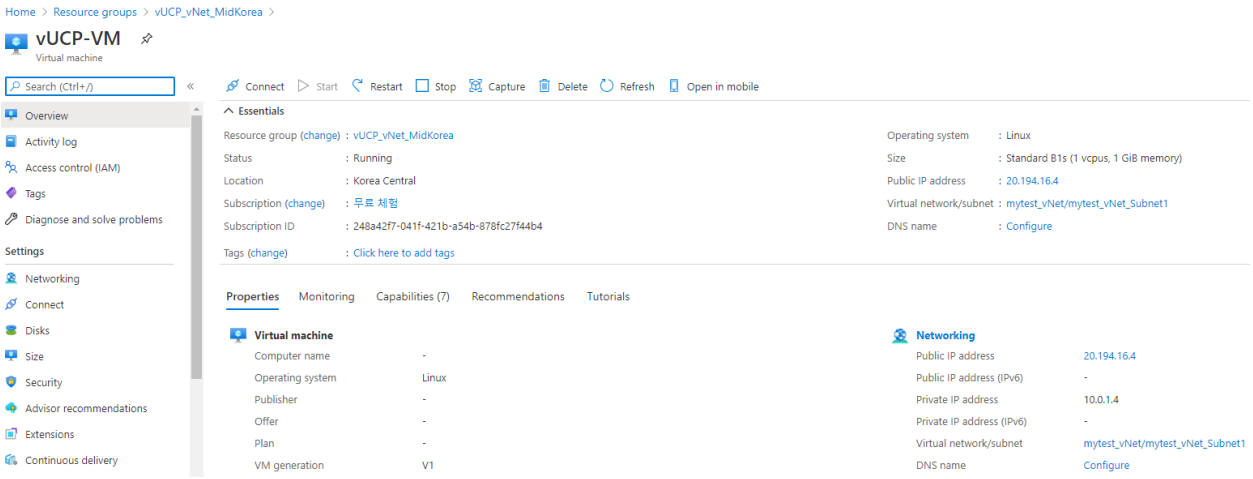


- **Networking**
  - Virtual network & Subnet: Create new or use created one
  - Public IP: 'Static'



- **Management: Next**
- **Advanced: Next**
- **Tags: Add (Optional) and Next**
- **Review + Create**
  - Review and, if correct, create

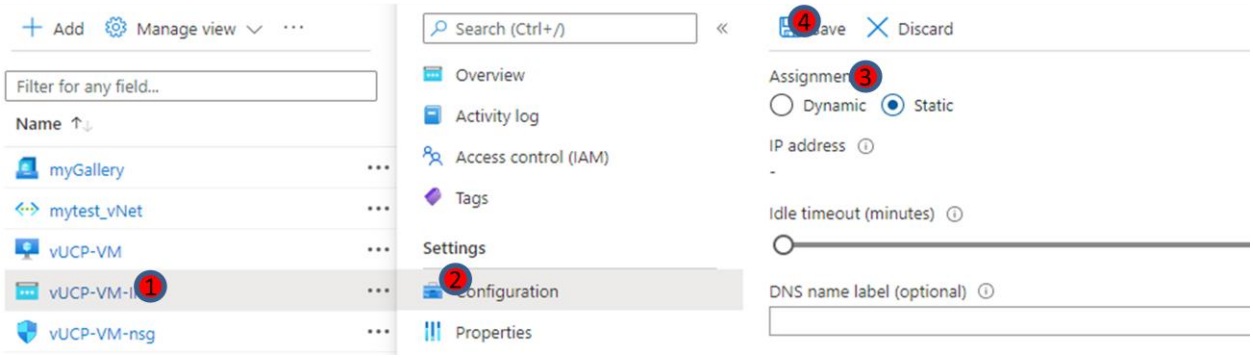
6) Go to resource and check if your VM is created correctly in your resource group.



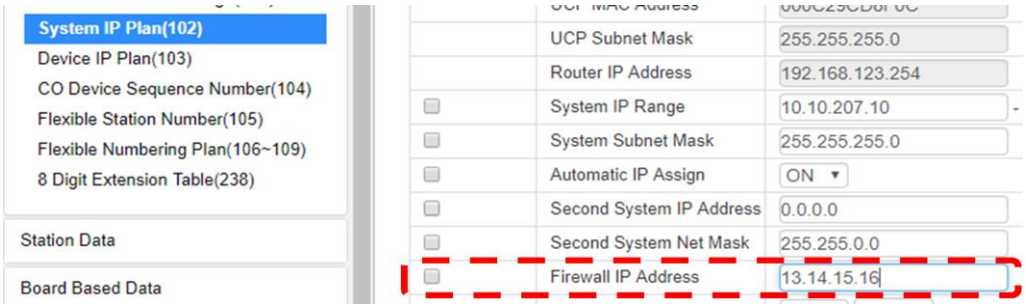
7) Configure inbound and outbound rules of your NSG(Network Security Group)

Refer to https://docs.microsoft.com/en-us/azure/virtual-network/network-security-groups-overview

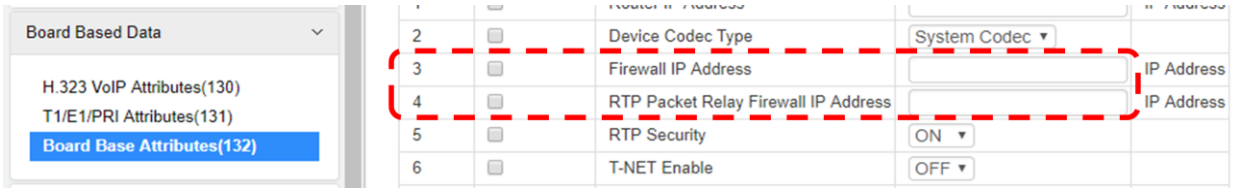
8) Configure the VM public IP



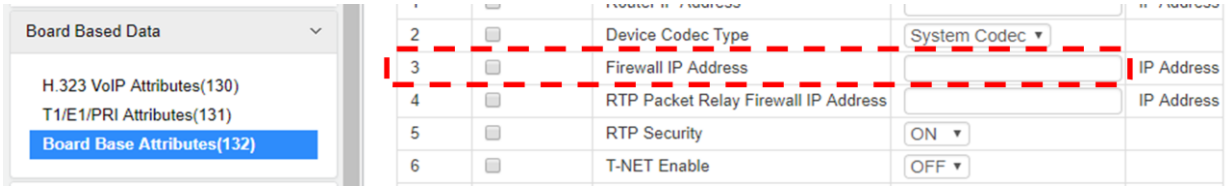
- vUCP: Use Static, The public IP of VM should be input as firewall IP in PGM 102 before creating serial number.



- vVOIM / vVOIMT: Use Static, The public IP of VM should be input as firewall IP and RTP Packet Relay Firewall IP in PGM 132



- vUVM/vMCIM: Use Static, The public IP of VM should be input as firewall IP in PGM 132



5.4 Connecting to Virtual Machine

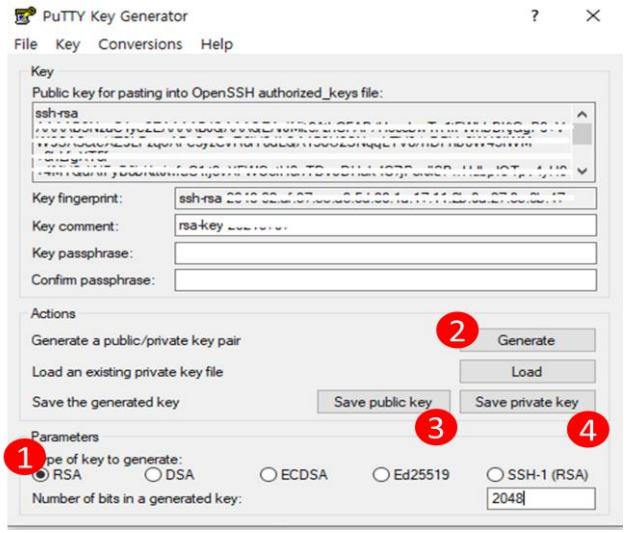
After Power on, you can access the virtual machine by SSH. Note that you should use the public IP address of the virtual machine. The default SSH port number is 22.

You should use your private key, which is obtained from the below procedure.

PuTTYgen and PuTTY are needed (https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html)

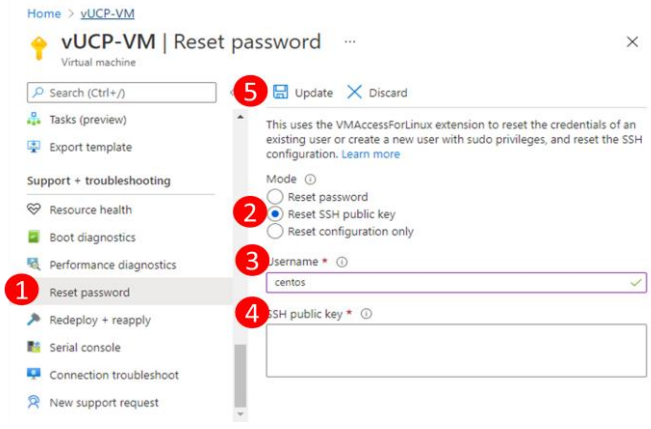
5.4.1 Private key creation

1) Start PuTTYgen
2) Select [RSA (SSH-2)]
3) Generate a public/private key pair
4) Save public & private key



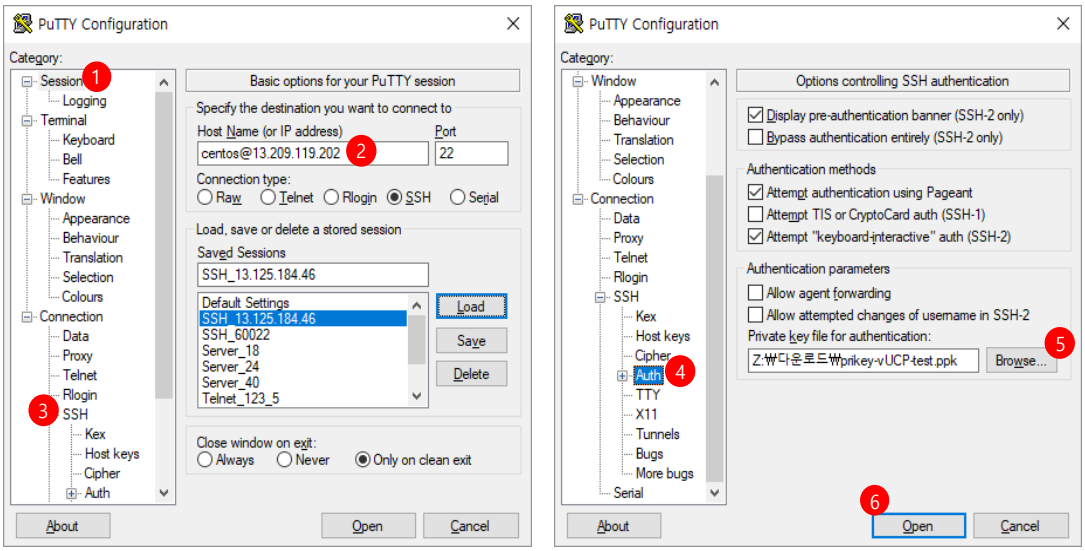
5.4.2 Reset virtual machine SSH public key

1) Select virtual machine
2) Click 'Reset password.'
3) Choose 'Reset SSH Public key' mode
4) Enter username as "centos" & saved SSH public key from PuTTYgen
5) Click 'Update'



5.4.3 PuTTY Session

1) Start PuTTY
2) Select [Category > Session] and input “centos@public IP”
3) Select [Category > Connection > SSH > Auth], lick [Browse] and select PPK file
4) Click [Open]



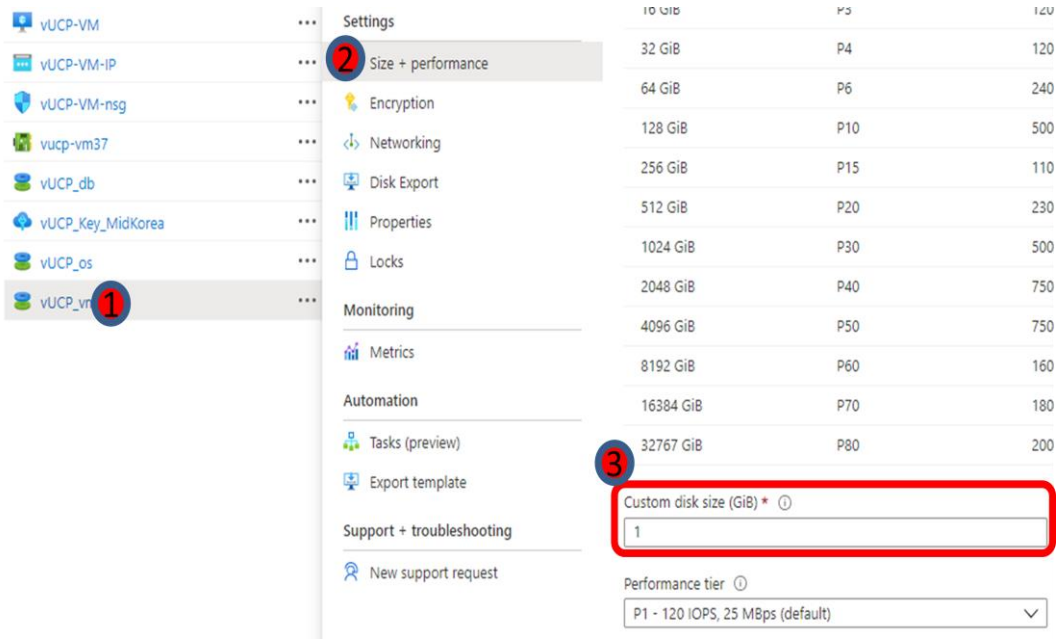
The login user is "centos," and no password was needed due to the authentication method.

Remember that you should add "sudo" before the shell command because the current user is "centos" and does not have 'root' permission. For example, "***sudo*** systemctl stop watchdog."

5.5 Change the disk size for voice storage (vUCP, vUVM only)

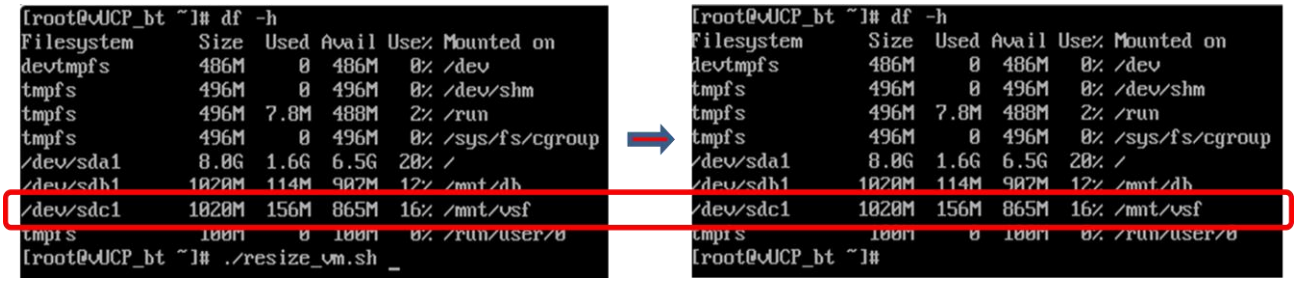
5.5.1 Power off the Virtual Machine

1) Select VM (voice data) disk
2) Click ‘Size + performance’
3) Modify disk size
4) Click 'Resize'



5.5.2 Power on the Virtual Machine

1) Login to your VM as 'centos' using SSH
2) Input ‘sudo /root/resize_vm.sh’
3) After reboot, check the status by the 'df –h' command



The disk size according to recording time

	100 hours	200 hours	300 hours	400 hours	500 hours
Disk size	3 GBytes	6 GBytes	9 GBytes	12 GBytes	15 GBytes

Maximum recording memory space is 13,750MB

6 License and Serial Number

The vUCP requires licenses to enable the vUCP system and use various business applications and advanced features to get the license. Unique software serial number needs to be created after installing vUCP software on a virtual server and configuring mandatory parameters from the system Web-admin.

Unique software serial number is built in combination with virtual machine-related factors and System-related factors described in the following subsections.

This means that new Installation on another virtual machine or any change of parameters impacts the system serial number, and this causes the system to go into the limited-service mode, which allows only internal calls and external emergency calls.

Therefore, it is strongly recommended that all these parameters are finalized before creating the software serial number from the Web-admin. Before the order of the license, you can create a unique Serial Number at any time.

But after the order and upload of a license file, you should transfer the existing licenses by a license transition process if you want to change the virtual machine or the system-related factors.

6.1 Related Factors of vUCP Serial Number

6.1.1 Virtual Machine Related Factors

One of the related factors is the information of the virtual machine. If you redeploy the virtual machine, the Serial Number will be changed, and the system will immediately go to 'Limited Service Mode.' If you use old licenses in the new virtual machine, you should transfer the existing licenses to a new virtual machine through our license portal. To move the virtual machine to another virtual server platform without requiring new licenses, use the vMotion.

6.1.2 System Related Factors

Other related factors are the following system information:

- System IP address
- Router IP address
- Firewall IP address

If you change one or more of the above IP addresses, the Serial Number will be changed, and the system will immediately go into 'Limited Service Mode.' But if the information of IP addresses is restored to its original value, the Serial Number will also be restored, and you can use it normally. Of course, if you want to change the IP addresses, you should transfer the existing licenses.

Note: in AWS, EIP should be used as a firewall IP.

6.1.3 Grace period

When Serial Number is invalid, the system goes into 'Limited Service Mode.' At that time, you can restore the system-related factors or select 'transfer' in the 'License Upload' menu of the web admin. If you click the 'transfer' button, the system will exit from 'Limited Service Mode,' and the 30-day grace period will start. You can use the system normally during that grace period but should transfer existing licenses to a new generated Serial Number in our License Portal. Otherwise, it will go to 'Limited Service Mode' again and remain in that state until uploading a new license file.

6.2 Serial Number Creation and License Transfer

The serial number is used to activate the licenses in vUCP. Therefore, after deployment of the vUCP virtual machine, you should create it in the system web admin and upload a license file.

After uploading a license file, you should transfer the licenses in the below cases. It is possible through system web admin and license portal.

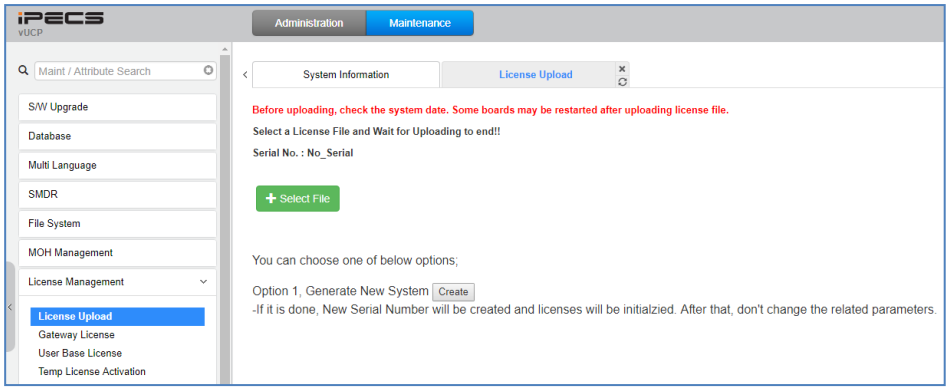
1) The server which contains the vUCP virtual machine is replaced with a new one.
2) The virtual machine was moved to another virtual machine without vMotion.
3) The IP address of the vUCP system, router, or firewall is changed.

6.2.1 Serial Number Creation

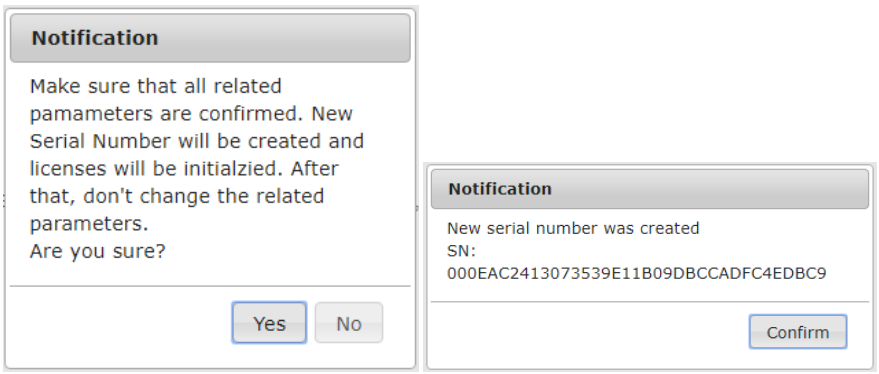
After installing the vUCP applications and configured all required parameters, you can create the Serial Number only in the system web admin. **Note that, in AWS, EIP should be used as a firewall IP.** You can download an official license file using this unique serial number. Uploading the license file onto the system enables the system to run in a normal operation mode.

Don't change the related parameters after the 'create' button creates a new Serial Number. If you change them, the Serial Number will be invalid, and the system will go to limited service mode.

The creation is done in 'Maintenance > License Management > License Upload' of web admin. You can create a Serial Number by clicking the 'Create' button.



After that, confirm the below popup windows.



After the creation of Serial Number, you can create a license file with that. If you upload the license file to the system, it will run in normal mode. Note that, before uploading the license file, the vUCP will remain in limited service mode.

6.2.2 License Transition

If you want to change virtual machines or system-related factors, you can transfer current licenses from the current Serial Number to new ones. Make sure that the transfer process should be done after all related factors are confirmed.

The transfer of licenses should be done both in the system web admin and in the license portal.

Refer to the following procedures;

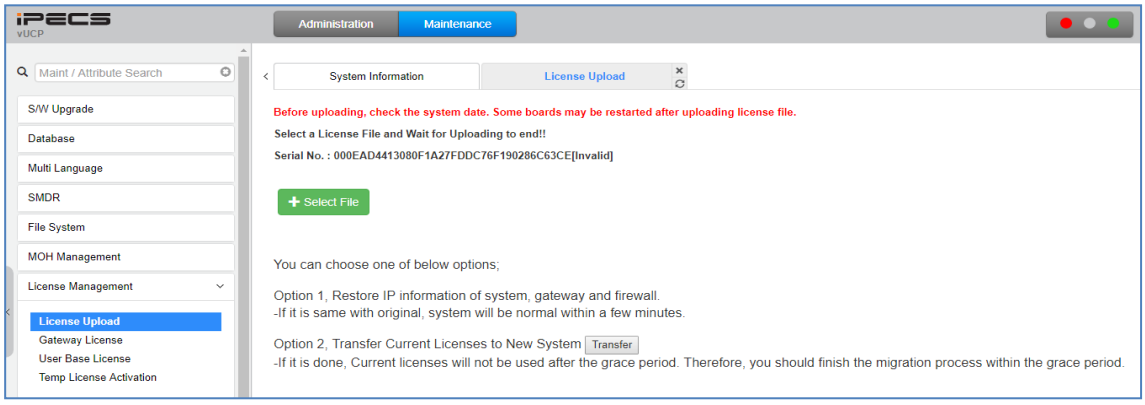
1) In system web admin, click the 'transfer' button to create a new Serial Number. If you do that, the system can normally run for a 30-day grace period.
2) In the license portal, transfer licenses from the old Serial Number to the new one and create a new license file. Use the same menu of H/W replacement at the license portal.
3) Upload the new license file to the system.

Remember that after the start of the transfer process, by clicking the 'transfer' button, it should be done within a 30-day grace period. Otherwise, the system will go to the limited-service mode and remain in that state until uploading a new license file.

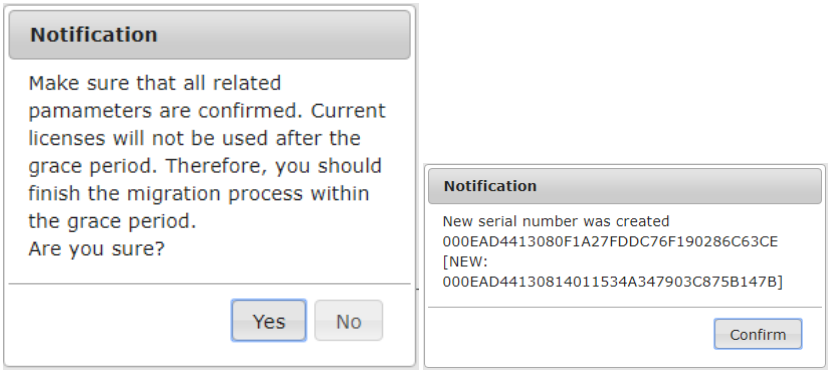
After the completion of the license transition, you cannot use old licenses anymore, and they are blocked in the license portal. Note that all running vUCP's are monitored. Therefore, if you use the systems illegally, all systems with old and new serial numbers may be blocked, and it may result in legal sanctions.

System Web Admin

Firstly, the transfer process starts in 'Maintenance > License Management > License Upload' of web admin— you can make a new Serial Number by clicking the 'Transfer' button. You can also see the current serial number is invalid.



After that, confirm the below popup windows.



If you confirm the 'transfer' of licenses, the state will be changed to 'After Transfer,' and the grace period will be started. You can use the system and licenses with the old serial number for 30days. Within a 30-day grace period, you should complete the 'Transfer' process by uploading a new license as below. Otherwise, the system will go to 'Limited service mode' again.

License Portal

To transfer license in license portal from old serial number to newly created one, you can use the same menu of H/W replacement at the license portal.

If you upload a new license file to the system, you can use the system and licenses, which are transferred to a new serial number.

6.2.3 Trial License

If you want to try the vUCP system before the official use, you can use the 'vUCP trial license.' It provides all system features and applications to maximum capacity for 90 days. It is applicable only before uploading an official license file. The following shows the procedure to get the trial license.

The system goes to the limited mode if no valid commercial license after trial expiration. You can find the status of the trial license in the system license overview of web admin. The system sends an expiring notice with attendant alarm and email, once before 30 days and daily from 7 days before expiration.

The process to get the trial license

1) Distributor orders vUCP-CS2400S(SWL), vUCP-MNTD-TRIAL, vUCP-SPLD
2) Distributor generates license with target system S/W serial number
3) Distributor orders vUCP-MNT1 in License Detail page with "Maintenance" button
4) Distributor downloads license file.
5) The distributor sends generated license file (*.DAT) to Minsoo Park minsoo.park@ericsson.com&Jinho Choi jinho.choi@ericsson.com
6) Updated license file with the vUCP-TRIAL license (90-days) will be provided by email.

Migrate trial version to commercial version before the expiration

1) Partners to send the trial license to reset request (using "reset form" attached) to ELG license manager before the expiration
2) ELG to reset the trial license.
3) Then, the Partner can download the commercial licenses using the same serial number.
   - (vUCP-CS2400S, vUCP-SPLD, vUCP-MNTD, vUCP-MNT1) + required system licenses and application licenses in use (or to use).

6.2.4 Online License

Since managing a unique fingerprint on a virtual machine is impossible, the license is periodically checked online. The manager must obtain an ID and PWD from the local dealer and program it. If you have not uploaded your license file, you will also need it.

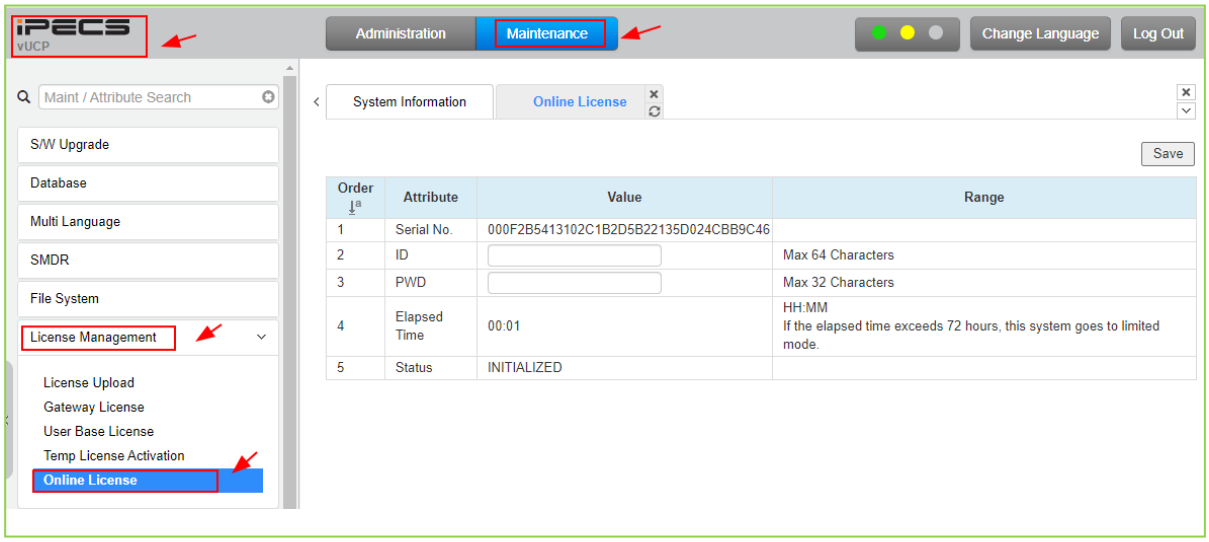


Figure 6.2.4 Online License

Notification

1) Serial No.: Serial Number of this System
2) ID/PWD: ID/PWD of AM
3) Elapsed Time: Time after successful checking
4) Status: Checking result

When vUCP is upgraded to 6.0, it starts a timer if a license has been uploaded. vUCP will check the license every 24 hours. After 15 days of no verification, the system goes into limited mode.

6.3 vUCP Gateway licenses

There is no serial number for vUVM, vVOIM/vVOIMT, and vMCIM, and the vUCP system controls these. Therefore, it is only necessary to download vVOIM/vVOIMT, vMCIM channel license, or vUVM channel/storage licenses as required.

6.4 Differences from UCP

6.4.1 CPU

- UCP100/600/2400: ARM-based
- vUCP: Intel-based

6.4.2 Serial Number

- UCP100/600/2400: Already marked in the factory.
- vUCP: Created by the user after deployment.

6.4.3 No USB Support

There is no USB in vUCP because the virtual machine is deployed.

6.4.4 VMware Tools(VMware only)

The VMware Tools are already installed in vUCP virtual machines. Therefore there is no need to install and update them.

6.4.5 Network Interface

- UCP100: 1 Ethernet
- UCP600/2400: 2 Ethernets
- vUCP: 1 Ethernet

6.4.6 Redundancy

The vUCP supports only Geographical Redundancy.

6.4.7 Configuration of the system network

UCP100/600/2400: system IP address, subnet mask, and route IP address can be changed in web admin

The vUCP: They are not editable in web admin, and their change is possible in ESXi console or SSH shells because there may be trouble, such as duplicated IP addresses after the initialization of the system.

6.4.8 Manual DIP switches

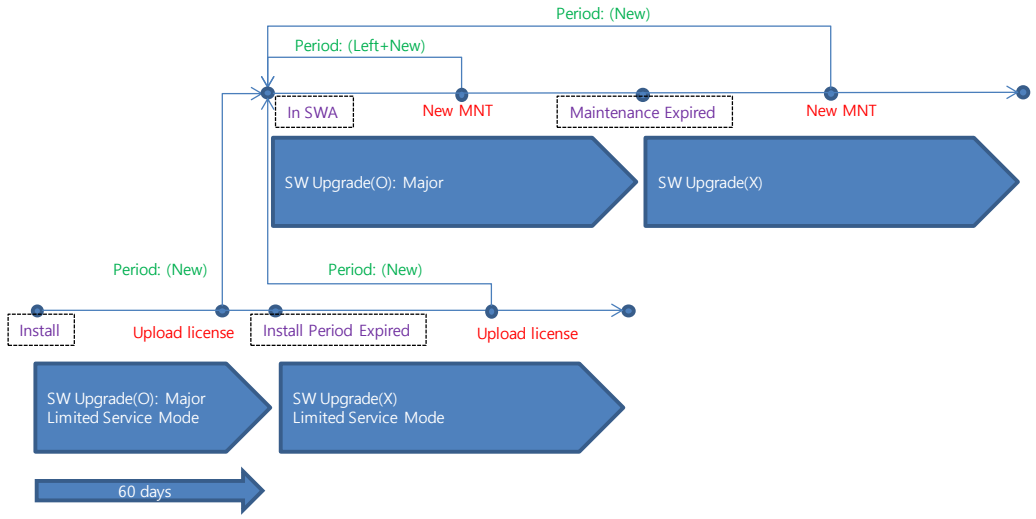
In vUCP, there are no manual switches which are Master/Salve and mode selection. But those related actions are possible through web admin. Refer to 'Maintenance > Trace > Dip Switch Status'. If you need a redundancy function, you should set those in each vUCP.

6.4.9 Maintenance

The vUCP is treated as an LME system, unlike existing UCP systems. Therefore, the following policies are adopted:

During 60 days after Install:

- Limited-Service Mode until uploading a license file. Only system attendants can make an external outgoing call even in 'Limited-Service Mode'
- Minor/Major Upgrade is available
- Device Registration after temp license activation.



7 Server Configuration

7.1 Access to Web and Install Wizard

7.1.1 vUCP

You can access the vUCP by the web browser.

Default login values;

- User ID/Password: Admin/1234
- Method: HTTPS and port number 443

If the vUCP is in an initial state due to the first creation or initialization, you should complete Install Wizard.

Note: The state of vUCP is 'Limited service mode' until uploading a new license file. In the case of AWS, EIP should be set as a firewall IP in PGM 102.

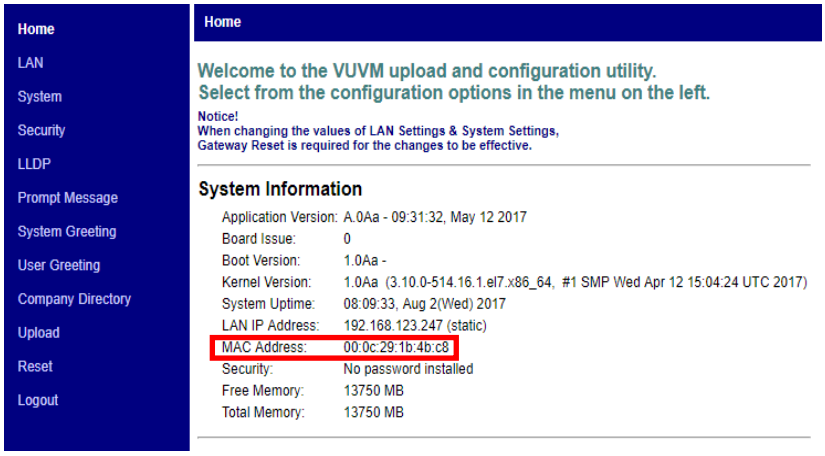
7.1.2 vUVM

You can access the vUVM by the web browser and change the system configuration.

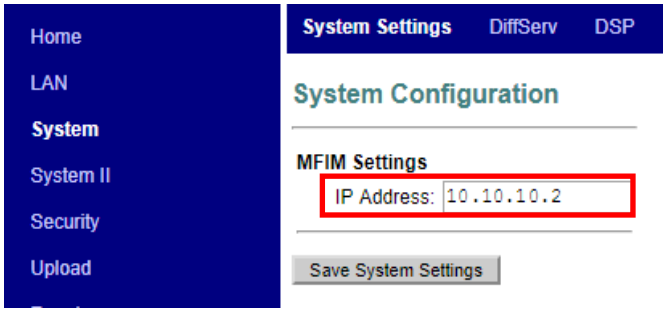
Default login values;

- User ID: No default user ID
- Password: No default password. You should change it to the 'Security' page.
- Method: HTTP and port number 80.

You can find 'MAC address which is used for registration



Also, you can modify the 'Server Settings' of System Configuration.



Note: vUVM should use "Local-Remote" instead of "Local" mode. In the case of AWS, EIP should be used as the firewall IP address in PGM132.

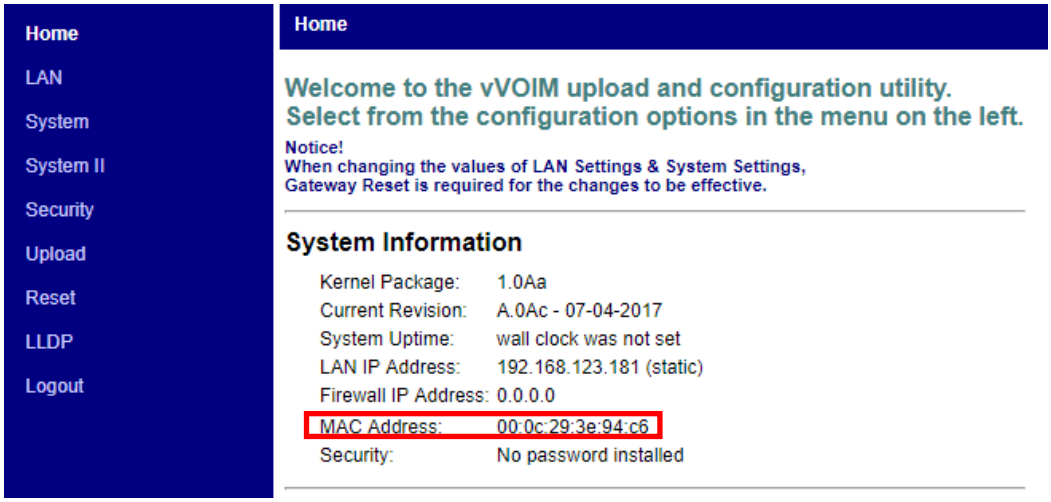
7.1.3 vVOIM/vVOIMT

You can access the vVOIM/vVOIMT by the web browser and change the system configuration.

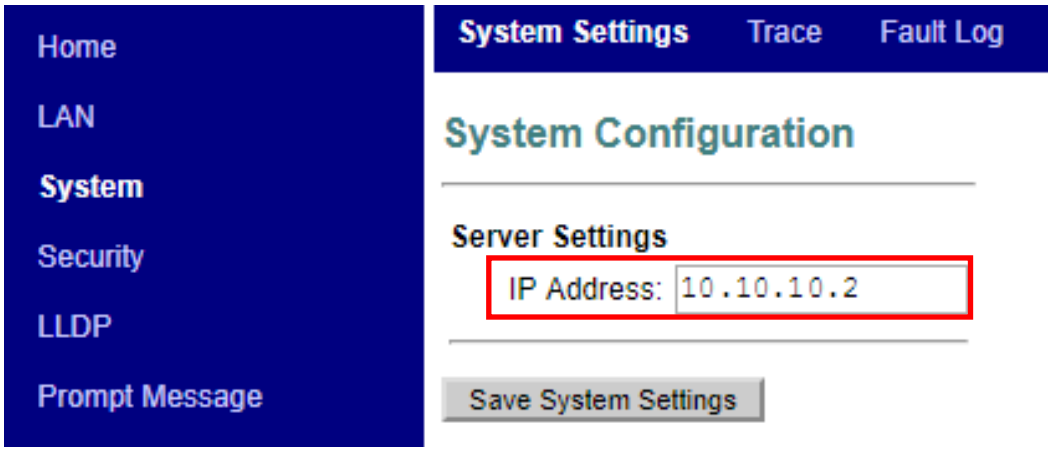
Default login values;

- User ID: No default user ID
- Password: No default password. You should change it to the 'Security' page.
- Method: HTTP and port number 80.

You can find 'MAC address which is used for registration



Also, you can modify the 'Server Settings' of System Configuration.



Note;

vVOIM/vVOIMT should use "Local-Remote" instead of "Local" mode.
In the case of AWS, EIP should be used as the firewall IP address and RTP Packet Relay Firewall IP Address in PGM132.

7.1.4 vMCIM

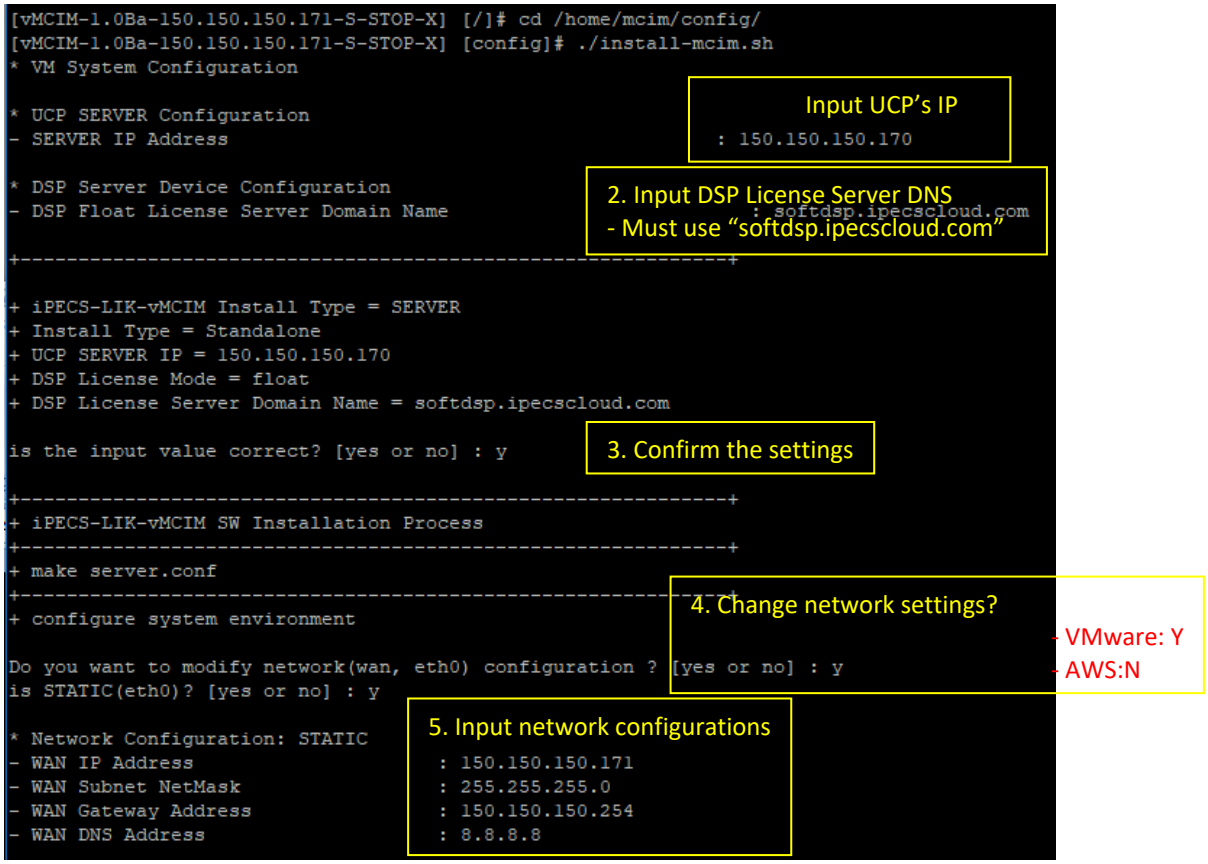
7.1.4.1 Configure Network Settings vMCIMv1

1) Check the date-time of the host (UCP)

The Date Time of vMCIM is set to sync with the vUCP and is used to get soft-DSP licenses.
=>NTP Server Service field in PGM195 should be set to "Enable." And the Date Time of vUCP is also set correctly because the license server checks the Date Time based on the GMT time.

2) Access vMCIM by SSH (port number 60022)
   - VMware: ID and password are required.
   - AWS: ID is "centos," and key authentication is required.

3) Execute “install-mcim.sh’ file.
   - VMware:
     # cd /home/mcim/Config
     # ./install-mcim.sh
   - AWS: "sudo" should be added before the command.



4) Execute 'restart.sh' to restart.
   - VMware:
     # cd /home/mcim
     # ./restart.sh
   - AWS: "sudo" should be added before the command.

7.1.4.2 Configure Network Settings vMCIMv2

You can configure this by the same method as vVOIM.

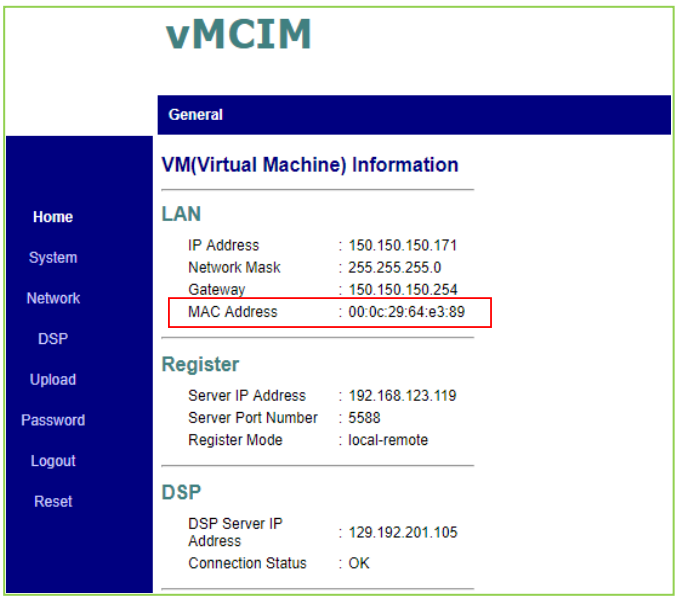
Web Access

You can access the vVCIM by the web browser and change the system configuration.

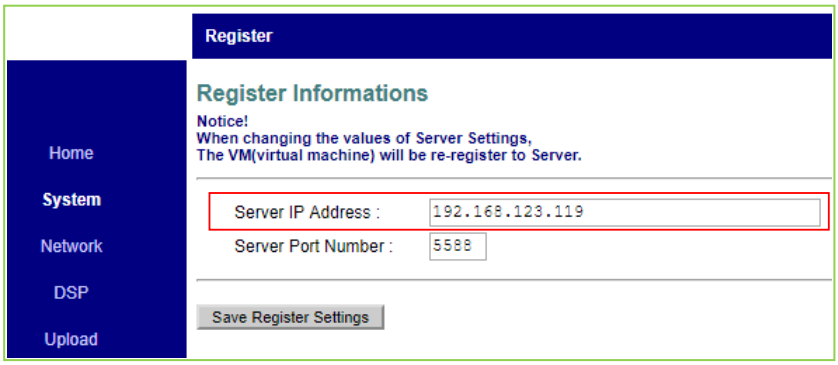
Default login values

- User ID: No default user ID
- Password: "ipkts." you should change it on the 'Password' page.
- Method: HTTP and port number 80.

You can find 'MAC address which is used for registration



Also, you should modify the 'Server IP Address' of System Configuration.



Note;

vMCIM should use "Local-Remote" instead of "Local."

7.2 Creating Serial Number

If it is the first time of vUCP virtual machine deployment, the Serial Number will not be set. Therefore, you must create a new Serial Number for licensing. ***Before that, make sure again that all IP configurations are set correctly. Especially in AWS, EIP should be used as the firewall IP.***

Refer to chapter 2.4.3.1 for a Serial Number creation.

7.3 Ordering and Uploading a License File

After creating a Serial Number, you can order and generate licenses in License Portal and upload a generated license file to the System in Web admin.

You can also register devices to vUCP by activating a Temp License, even if a license file is not uploaded. But because the state of vUCP is 'Limited Service Mode,' only system attendants can make the external outgoing call.

8 System Upgrade

The vUCP systems are initially provided as OVF file format. Therefore, you do better upgrade the system to the latestversion after deploying OVF file.This upgrade is done through the web admin maintenance page like the current UCP upgrade process.

8.1 Requirement

You must check if the software maintenance state is upgradable in advance to upgrade vUCP system, but vUVM and vVOIM/vVOIMT can upgrade at any time such as other UCP gateways.

You can download the ROM files for upgradeat theGPS website.

https://partner.ericssonlg-enterprise.com.

8.2 Backup DB

It is better to create a DB file in web admin and save it to your desktop or laptop before system upgrade. You can use it to restore the system DB data.You can also use the'Snapshot' feature in vSphereto prepare unwanted conditions.

8.3 Web Upgrade

Refer to the UCP manual.It is same as UCP systems.

Thanks for purchasing iPECS system.

iPECS is an Ericsson-LG Brand

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